

# UNDERSEA WARFARE

## Training:

Preparing for  
Tomorrow's  
High-End  
Conflict

### INSIDE

Tackling Your J0 Tour

2018 J00Ys Hit D.C.

Cool Tech Making Training Easier

Turning Innovation Into Reality





## On the Cover



Lt. Samuel Butts, at Naval Submarine School on Naval Submarine Base New London, Groton Conn. The Submarine Bridge Trainer creates a highly realistic visual and auditory environment in which Sailors learn and practice navigating, piloting, and mooring a submarine using all relevant on-board sensors and systems.

Photo by Alexander Gago

## UNDERSEAWARFARE

THE OFFICIAL MAGAZINE OF THE U.S. SUBMARINE FORCE

# Training: Preparing for Tomorrow's High-End Conflict

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## FORCE COMMANDER'S CORNER

Vice Adm. Charles A. Richard, USN  
Commander, Submarine Forces



Undersea Warriors,

In the last edition of *UNDERSEA WARFARE Magazine*, we talked about our progress toward instilling a warfighting culture in everything we do. I highlighted our use of competition to drive innovation, our standup of the Aggressor Squadron, and a new way to solicit ideas and feedback directly from you via HeySUBFOR@navy.mil.

A frequently repeated quote, and for good reason, is an admonition that can be traced back to Archilochus, an early Greek lyrical poet and soldier circa 650 B.C. Archilochus said that in conflict, "we do not rise to the level of our expectations, we fall to the level of our training."

The theme for this edition of *UNDERSEA WARFARE Magazine* is training—one of the most important things we do as Submariners to accomplish today's mission and to prepare for tomorrow's high-end conflict.

I am extremely proud of the Force's recent full-rudder shift toward readiness for great power competition. Nowhere is this more evident than in many of the innovative ways we are assessing and applying lessons learned and the latest technologies to how we train. For example:

- Submarine Learning Facility, Norfolk recently implemented a "high-end war-fighting IPDT" for USS *Washington* (SSN 787). The lessons learned from this effort will inform Fleet Readiness Training Plan planning and execution moving forward.
- The Submarine Learning Center in Groton has produced authoritative reference materials on adversary orders of battle for use by students and submarine crews. These "baseball cards" contain the best information available from the Office of Naval Intelligence and actual data collected during real-world missions. You can access these products via the SLC SIPR site or your SOBT hard drive.
- All school houses are in receipt of an updated "red" playbook and are working with the Aggressor Squadron to ensure that crews receive the best blue vs. red (vice blue vs. blue) training scenarios.
- We are reducing redundancy by giving your Commanding Officer the option to validate knowledge or skill requirements for basic-level qualifications based on the successful completion of required off-hull schools and/or SOBT products, and vice-versa.
- We have developed and are using metrics to ensure that the changes we make to how we train produce Sailors who are better prepared in less time to accomplish higher-end missions/tasks with greater margins of safety.

Throughout this issue, you will read about other great ways the Submarine Learning Center and the Submarine Force writ large are working together to transform how we train. It's truly an awesome time to be an undersea warrior!

Remember...we will not get a WARNORD.  
Prepare for battle now!  
Our nation needs you.  
AIIII!

C.A. Richard

**"I am extremely proud of the Force's recent full-rudder shift toward readiness for great power competition. Nowhere is this more evident than in many of the innovative ways we are assessing and applying lessons learned and the latest technologies to how we train "**





## DIVISION DIRECTOR'S CORNER

Rear Adm. Thomas E. Ishee, USN  
Director, Undersea Warfare Division

Undersea Warriors,

Since the last issue of *UNDERSEA WARFARE Magazine*, I relieved Rear Adm. Tammen as Director of Undersea Warfare. I am excited to leverage my recent Sixth Fleet experience in equipping our warfighters for the future fight. We are at a pivotal point as a submarine force. Our adversaries are aggressively seeking to erode our advantage in the undersea domain, but we are evolving to maintain superiority. We must ensure that our undersea forces are equipped with new capabilities to improve our reach and lethality in the near term, are programmed to receive novel technologies in the mid-term, and are on a path to execute our Commander's Vision in the future. To align these efforts, N97 has two main lines of effort: Strategic Deterrence and Theater Undersea Warfare. Below is an update on where we stand in these lines of effort and what changes you will see in the near future.

*Strategic Deterrence.* Strategic Deterrence remains DoD's and the Navy's #1 priority, and the Submarine Force provides the nation's survivable sea-based strategic deterrent. The force is sized to keep a minimum of 10 operational SSBNs properly positioned, postured, and survivable or capable of becoming so at all times. To ensure we continue to provide the required forces, we extended the life of *Ohio*-class submarines to 42 years and are focusing resources to keep the *Columbia*-class on track. Extending the life of the *Ohio*-class boats is not enough to pace the threat; we must continue to improve the capability and lethality of the boats we send to sea. All *Ohio*-class submarines will have the Submarine Warfare Federation of Tactical System (SWFTS) installed by 2022 to keep them relevant throughout the 2030s. The *Columbia* program is ramping up, advanced construction of key components is in progress, and full production will start in FY21. USS *Columbia* will be ready to execute her first patrol NLT than October 2030.

*Theater Undersea Warfare.* We have made strong investments in advancing undersea lethality. New capabilities will be on your submarine or in the water column with you in the next five to ten years. We are starting construction of *Virginia*-class Block V this year, which includes the Virginia Payload Module (VPM). Unmanned Underwater Vehicles, advanced anti-ship cruise missiles, the next-generation heavyweight torpedo, and hypersonic land attack missiles will complement the Submarine Force by the mid 20s. We will see a dramatic difference in the range and lethality that we can generate from the undersea domain.

*Domain-centric vice platform-centric.* As we move toward the future of undersea warfare in this era of great power competition, we must look broader than only developing undersea capabilities around tactical submarines. The undersea domain will be one large integrated network that consists of SSNs, UUVs, fixed sensors, deployable sensors, communication channels, and other payloads. We will have better situational awareness, stealth, and a greater spectrum of effects. Lethality will be delivered by payloads that are platform-agnostic, and information from a multitude of undersea sensors will be available for fusion in multiple locations to enable precise strategic decisions.

The investments we make in our platforms and payloads are necessary to maintain our undersea superiority, but these technological improvements are not the largest advantage we have. This issue acknowledges the real game changer in our undersea fight: the people! Adm. Gilday said it best in his message to the fleet, "The people are our most important weapon system."

T. E. Ishee

## UNDERSEAWARFARE

The Official Magazine of the U.S. Submarine Force

**Vice Adm. Charles A. "Chas" Richard**  
Commander, Submarine Forces  
Commander, Submarine Force Atlantic

**Rear Adm. Blake L. Converse**  
Deputy Commander, Submarine Forces  
Commander, Submarine Force U.S. Pacific Fleet

**Rear Adm. Tom E. Ishee**  
Director, Undersea Warfare Division (N97)

**Master Chief Petty Officer John J. Perryman**  
COMSUBLANT Force Master Chief

**Master Chief Petty Officer Kevin A. Scarff**  
COMSUBPAC Force Master Chief

**Cmdr. Jodie K. Cornell**  
COMSUBLANT Public Affairs Officer

**Cmdr. Cynthia (Cindy) Fields**  
COMSUBPAC Public Affairs Officer

Military Editor: **Lt. Cmdr. P. Brent Shrader**

Senior Editor,  
Design & Layout: **Rick Johnston**

Managing Editor: **Thomas Lee**

### Charter

**UNDERSEA WARFARE** is the professional magazine of the undersea warfare community. Its purpose is to educate its readers on undersea warfare missions and programs, with a particular focus on U.S. submarines. This journal will also draw upon the Submarine Force's rich historical legacy to instill a sense of pride and professionalism among community members and to enhance reader awareness of the increasing relevance of undersea warfare for our nation's defense.

The opinions and assertions herein are the personal views of the authors and do not necessarily reflect the official views of the U.S. Government, the Department of Defense, or the Department of the Navy.

### Contributions and Feedback Welcome

Send articles, photographs (min. 300 dpi electronic), and feedback to:

Military Editor, Undersea Warfare CNO N97  
2000 Navy Pentagon, Washington, DC 20350-2000  
E-Mail: [underseawarfare@hotmail.com](mailto:underseawarfare@hotmail.com)  
Phone: (703) 614-9372 Fax: (703) 695-9247

### Subscriptions and back issues

U.S. Government Publishing Office  
P.O. Box 979050, St. Louis, MO 63197-9000  
Phone: (866) 512-1800 or fax (202) 512-2104 (U.S. & Can.)  
Washington, D.C. area or Intl. calls: (202) 512-1800  
Email: [ContactCenter@gpo.gov](mailto:ContactCenter@gpo.gov)  
Website: <https://bookstore.gpo.gov>  
Annual cost: \$28.00 U.S.; \$39.20 Foreign

### Authorization

**UNDERSEA WARFARE** (ISSN 1554-0146) is published quarterly from appropriated funds by authority of the Chief of Naval Operations in accordance with NPPR P-35. The Secretary of the Navy has determined that this publication is necessary in the transaction of business required by law of the Department of the Navy. Use of funds for printing this publication has been approved by the Navy Publications and Printing Policy Committee. Reproductions are encouraged with proper citation. Controlled circulation.



CHINFO Merit Award Winner



Silver Inkwell Award Winner

## LETTERS TO THE EDITOR

In keeping with *UNDERSEA WARFARE Magazine's* charter as the Official Magazine of the U.S. Submarine Force, we welcome letters to the editor, questions relating to articles that have appeared in previous issues, and insights and "lessons learned" from the fleet.

*UNDERSEA WARFARE Magazine* reserves the right to edit submissions for length, clarity, and accuracy. All submissions become the property of *UNDERSEA WARFARE Magazine* and may be published in all media.

Please include pertinent contact information with submissions.

Send submissions to:

**Military Editor**

**Undersea Warfare CNO N97**

**2000 Navy Pentagon**

**Washington, DC 20350-2000 or**

**[underseawarfare@hotmail.com](mailto:underseawarfare@hotmail.com)**

## ★ MEDAL OF HONOR MOMENT ★



Cmdr. Howard W. Gilmore  
COMMANDING OFFICER USS GROWLER

"For distinguished gallantry and valor above and beyond the call of duty as Commanding Officer of the USS GROWLER during her Fourth War Patrol in the Southwest Pacific from 10 January 1943 to 7 February 1943. Boldly striking at the enemy in spite of continuous hostile air and anti-submarine patrols, Commander Gilmore sank one Japanese freighter and damaged another by torpedo fire, successfully evading severe depth charges following each attack. In the darkness of night on 7 February, an enemy gunboat closed range and prepared to ram the USS GROWLER. He daringly maneuvered to avoid the crash and rammed the attacker instead, ripping into her port side at 17 knots and bursting wide her plates. In the terrific fire of the sinking gunboat's heavy machine guns, Commander Gilmore calmly gave the order to clear the bridge, and refusing safety for himself, remained on deck while his men preceded him below. Struck down by the fusillade of bullets and having done his utmost against the enemy, in his final living moments, Commander Gilmore gave his last order to the officer of the deck, "Take her down." The USS GROWLER dived; seriously damaged but under control, she was brought safely to port by her well-trained crew inspired by the courageous fighting spirit of their dead Captain. By his prompt actions and valiant spirit of self-sacrifice, Commander Gilmore reflected great credit upon himself and upheld the highest traditions of the United States Naval Service. He gallantly gave his life for his country."



# STRATEGIC INNOVATION from the DECKPLATE

For a good part of the Submarine Force's history, we were the innovators, the disruptors. We broke free of the surface, sustained our depth and reach with nuclear power, and increased our stealth and mission capability through quieting, sensors, and computers.

Today, however, we are struggling to keep up with the pace of innovation in private industry. We are surrounded by examples of innovative commercial technologies changing the world before our very eyes, yet many we may not find on a submarine for several years.

One such example is the explosion of artificial intelligence and machine learning (AI/ML). Each day brings advances in image recognition, automobile autonomy, machine mastery of strategy games, new recommendation engines, and groundbreaking optimization analytics. The Navy as well as the other services have tried to follow, ingest, and replicate these innovations, but bureaucratic and cultural barriers continue to hinder the adoption of new and innovative AI solutions. Many in the Department of Defense (DoD) see AI/ML as a technology still in its infancy, while industry leaders consider a large set of AI deep learning applications "state of the practice."

Exacerbating this problem is the explosion of "consultants" who seek to capitalize on AI hype, touting its abilities to solve any problem. Without an AI-literate class of decision makers in DoD, breaking out the signal from the noise can prove challenging. But even in this noisy environment, strong signals can emerge. It starts with a single Sailor with the right knowledge, skills, mindset, and passion to point it out to the rest of us.



**This is one of those stories, a story in which one junior officer (JO) and a small group of Sailors made a big difference. It's a story of innovation from the deckplate, the power of teams, and finding a way to own and solve the problems at hand. We hope that the lessons from this story encourage other Sailors with innovative ideas to come forward and contribute—not just in AI, but in all the many areas where the Submarine Force can and must improve.**

### Project Harbinger

The origins of what became known as Project Harbinger start with Lt. Austin Anderson, a JO from USS *Springfield* (SSN 761). In 2017, he was on his post-JO shore duty as a Secretary of the Navy Innovation Advisory Council (NIAC) fellow. Lt. Anderson was evaluating the use of AI/ML algorithms and their applicability to sonar and fire control problems like contact identification and solution development. He taught himself how to build and train AI/ML algorithms and set to work on recreating our primary fire control algorithms.

The early results were excellent, and he clearly saw the technology's potential to substantially improve our capabilities. Despite the success, Lt. Anderson wasn't sure how to get these algorithms deployed on submarines. While they showed great promise, his ideas needed refinement and endorsement. Like many JOs, he knew nothing about how the Navy sets requirements and acquires new capabilities. He was not going to be able to transition this technology on his own.

He did, however, start showing his results to other Submariners. He found passionate advocates in a small community of officers in the Pentagon and elsewhere. They included Capt. Scott McGinnis (Secretary of Defense Corporate Fellow at Stanford Research Institute), Cmdr. Bennett Christman (Chief of Naval Operations N00Z), Cmdr. Cameron Aljilani (Office of the CNO (OPNAV) N97), Cmdr. Dan Stock (OPNAV N97), Lt. Cmdr. Ryan Hilger (OPNAV N97), Lt. Cmdr. Joe Huck (USMC Strategic Initiatives Group), and Lt. Christian Mineur (Navy Digital Warfare Office (DWO)). Together they formed an informal team and started pitching the idea of AI algorithms to improve solution development.

Early on, they briefed several decision makers in the Pentagon. Most were initially skeptical about applying AI/ML to undersea warfare; they did not see its purpose or how it was different from what the capability development community was already doing. To better frame their argument, the team decided to create a strategy document to clearly articulate why and how AI should be applied in the Submarine Force.

With a clearer problem definition and refined strategy document, the team briefed the Submarine Transition Advisory Board, the board that prioritizes research and development for the Submarine Force, in May 2018 and later Vice Adm. Richard, then the incoming Commander Submarine Forces (COMSUBFOR), and Rear Adm. Dollaga, who had recently been relieved as Commander, Undersea Warfighting Development Center (UWDC). Rear Adm. Dollaga spent two hours with the team learning everything he could about Lt. Anderson's prototype algorithms and the strategy the team was proposing.

Receptive to the team's recommendations and energized by their promising ideas, he asked his outgoing chief of staff, Capt. John McGunnigle, to stay on for a year and develop an AI/ML capability pipeline for the Submarine Force. Lt. Anderson was selectively detailed to the Pentagon after his fellowship so that he could work in the DWO full time. Together, Capt. McGunnigle, Lt. Anderson, and Lt. Mineur have been hard at work on Project Harbinger ever since.

Project Harbinger is already demonstrating capability. Working hand-in-hand with partners in the submarine advanced development community, the execution team developed a data pipeline for training algorithms, fielded a prototype appliance for shipboard use, and deployed code from ashore to sea that was executed on an operational submarine—all in less than a year. The team is just getting started.



Lt. Austin Anderson aboard USS *Springfield* (SSN 761) as a Junior Officer.

### The Lessons

While the rest of the Project Harbinger story remains to be told, here are five lessons from the team's experience that other Submariners can use to solve the problems facing the Submarine Force.

**Lesson 1:** Commanding Officers should be on the lookout for talent and place people with great ideas in billets where they can make a difference.

Lt. Anderson's CO, Cmdr. Brent Spillner, encouraged him to apply for the NIAC fellowship right after the boat received the announcement message. He knew about Lt. Anderson's coding skills and creativity. He also knew that sending Lt. Anderson to NIAC was in the best interests of the Navy, taking the time to personally engage with the detailers to endorse his selection and assignment.

Had Lt. Anderson not been in this assignment, he wouldn't have been afforded the time to teach himself to code the algorithms, nor would he have had the opportunity to explore their applications to the Submarine Force. While NIAC no longer exists, COs can still encourage promising Sailors by assigning them to places like UWDC, DWO, our submarine program offices (e.g., IWS 5, PMS 401), and Secretary of the Navy Tours with Industry.

**Lesson 2:** If you see something, say something.

Leadership isn't just for COs. Even deep within a staff, you as a

JO or petty officer can advocate for changes that affect your boat or even the entire Force. This type of staff-level leadership is about owning an idea from inception through to its implementation. The first step is to tell someone about your idea, typically your department head or CO. Lt. Anderson didn't know how to implement his idea, but he knew that his former Engineer, Lt. Cmdr. Hilger at OPNAV N97, might. That got the ball rolling and ultimately led to the formation of a diverse team of mid-grade officers who rallied around Lt. Anderson's project and generated the access to senior leadership that the project needed to succeed.

If you're at a loss for whom to contact, consider UWDC. Its role is to serve as an entry point for any good idea to improve capability and concepts of operation in the Submarine Force. Sailors who want to make a change should brief their chain of command and then contact the UWDC Capability Development Division.

**Lesson 3:** It takes a (small and diverse) village to make a change.

If you've got an idea, find a group of supporters who can help you. Recognize what you don't know and reach out to find those who can contribute what you need to move forward. There is plenty of evidence that small, diverse teams produce the best results, so be selective. While all of your friends may be great people, they may be too much like you to bring about success. Instead, find people who know things you don't, who challenge your thinking, and who bring different perspectives. If you can, find people who have connections to resources and access to those with influence. The connections may not only afford you the resources and leadership endorsement you need, but they can provide an outside perspective to evaluate your team's ideas.

Be careful, however, not to let the team's size continue to grow unbounded. There is also evidence that groups become less effective as they expand beyond what is absolutely necessary. This is the idea encapsulated by Jeff Bezos' famous "Two Pizza Rule," which says that a team's size should be no greater than the number of people that you can feed with two pizzas.

The Harbinger team met this test. It was small and spanned multiple perspectives, ranks, and organizations. Lt. Mineur had just joined the Navy's DWO after a Secretary of the Navy Tour with Industry at General Electric Digital. He had numerous commercial industry practices to inform the team's thinking. Similarly, Cmdr. Stock worked closely with the acquisition community on what capabilities to bring to Submarine Warfare Federated Tactical Systems. His knowledge was critical to understanding how Lt. Anderson's algorithm could get fielded. Finally, Capt. McGinnis and Cmdr. Christman had a wealth of contacts across the Pentagon and beyond. These were key to getting an audience with the right decision makers.

**Lesson 4:** Write it down.

Adm. Rickover famously said, "Nothing so sharpens the thought process as writing down one's argument." The team initially met skepticism from Submarine Force decision makers because their argument wasn't yet fully formed. Merely presenting a demonstration of Lt. Anderson's algorithms failed to clearly answer the frequent question of "What problem are you trying to solve?" Recognizing the need to strengthen their argument, the team turned to writing their ideas in the format of an operational design. They laid out an argument for why the Submarine Force needs

AI algorithms and what investments and decisions senior leaders needed to make to solve the problem. As the team developed this product, it sharpened their own thinking and gave them a clear point of departure for discussions with senior leaders.

This experience shows the value of going through the exercise of defining the problem that you are trying to solve. If you have an idea, write down an explanation of how it will solve that problem, and then identify the steps that you and others must take to bring your idea to fruition. Don't be satisfied with your first draft. Keep sharpening your arguments by presenting your paper to different audiences for feedback. Listen and understand the criticism, and try to address valid concerns through revision. In the end, you will not only have a document that provides clarity on what you are trying to achieve, but you will be able to explain and defend your ideas in any brief or discussion.

**Lesson 5:** The seeds of ideas need senior leaders to provide the soil in which they can take root and grow.

We are fortunate to have many young Sailors with sharp digital skills. Some were acquired in college, while others might have been learned in less traditional ways. This is in sharp contrast to most of our key Submarine Force decision makers, who attended college before the advent of smartphones, tablets, the cloud, and even the Internet. This description of reality is in no way meant to be pejorative; it just describes differences in the backgrounds of those who might be most likely to see and have ideas about areas of digital potential and those who are going to decide on the adoption of those ideas. Knowing this, it is critical that the Submarine Force leaders keep generally up to date on the latest technology trends and listen with an open mind to Sailors presenting a different approach to solving a particular problem.

In this case, we were fortunate that Vice Adm. Richard knew a great deal about the technology the team presented. He even wanted to broaden the scope to more than just the applications and algorithms the team presented, ultimately telling us, "Full speed ahead!"

The Submarine Force is maintaining its undersea superiority through rapid innovation and deployment of capabilities to the Fleet. This new paradigm is slowly transforming the acquisition community and demonstrates that Sailors with technical expertise have the potential to directly contribute to the fight, keeping the Submarine Force battle ready.

The team was able to innovate from the deckplate through the combination of technical expertise, critical and visionary thinkers, networks, and the commitment to owning the problem and the solution. The lessons from this effort can help other hidden teams around the Submarine Force get buy-in for their ideas with leadership and find like-minded Sailors to help develop and implement the solutions. We need to foster this kind of innovation and promote ideas that have the potential to improve our warfighting capability. If you have them, COMSUBFOR stands ready to back you in trying to implement them. Send them a note at [HeySUBFOR@navy.mil](mailto:HeySUBFOR@navy.mil).

Cmdr. Christman is the Navy's Federal Executive Fellow at the Johns Hopkins University Applied Physics Lab and Prospective CO, USS *New Hampshire* (SSN 778).

Lt. Cmdr. Hilger is an Engineering Duty Officer (EDO) assigned to Strategic Systems Program. Prior to becoming an EDO, he served in OPNAV N97 and as Engineer on USS *Springfield* (SSN 761).



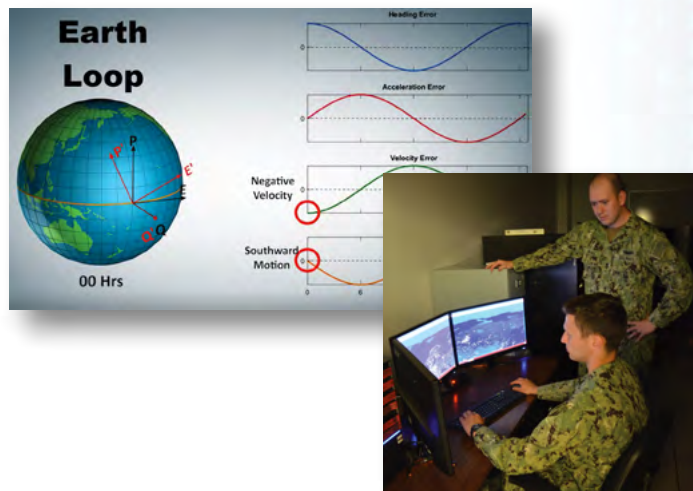
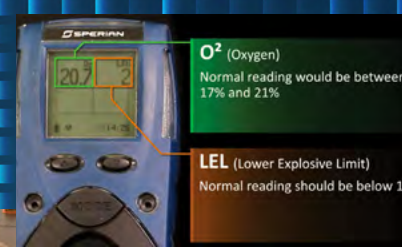


Photo by Randell Stark Senior Chief Electricians Mate



Photo by Alexander L. Gago



# Taking Modern Learning Technology to New Depths

**Modern learning technology assumes various names such as augmented reality (AR), adaptive training (AT), simulation learning, and computer-based learning. Aside from the different acronyms, the basic concept is enhancement of teaching, learning, and assessment through the application of technology.**

The educational needs of today's Navy have shifted, with increased emphasis on the Navy's Ready Relevant Learning (RRL) initiative. RRL is the Navy's transformation to more effectively recruit, develop, manage, reward, and retain Sailors by modernizing schoolhouse content based on validated fleet training requirements.

Submariners across the fleet are now engaged in modern, hands-on, learning technologies that use a variety of applications, all of which provide Sailors opportunities to create training environments that continually refine their learning experiences.

## Augmented Reality Learning Technology

One of the biggest areas of learning technology is in hands-on augmented reality (AR). Long before mobile AR applications

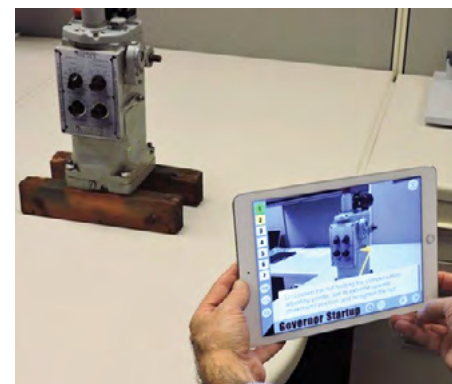
were popular, the Navy had implemented AR real-time overlaying technology for its submarine diesel governor's engine maintenance training.

In years past, governor maintenance replacement training was performed on an operating submarine diesel engine. Due to high costs, environmental concerns, and limited ability to conduct casualty training on operating engines, the operational engines were retired and removed from the training curricula. As a result, the detailed understanding of how the governor works and how adjustments affect an operating diesel engine has decayed over time.

Naval Sea Systems Command (NAVSEA) Submarine Training Directorate teamed up with the Submarine Learning Center (SLC) and Huntington Ingalls Industries to develop a solution—

the 3D-printed Woodward Governor and AR tablet. The innovative AR governor tablet improves crew readiness, as crews learn how to replace and properly adjust a governor while at sea.

Branded the "Woodward Governor 3D Augmented Reality," it provides the Navy with a solution to reverse the knowledge decay. NAVSEA funded the tool's research and initial development in 2016, with prototypes deployed to Naval Submarine School (NSS) in Groton, Conn. and Trident Training Facility in Kings Bay, Ga. in 2017. The Woodward Governor 3D AR tablet was deployed to the remaining submarine training facilities in 2018.



The Woodward Governor 3D AR tablet provides a computer graphic overlay that enables Sailors to visualize maintenance procedures on the governor. AR lets Sailors see the effects of adjustments to the 3D Woodward governor that are often required following governor replacement on submarines. The AR overlay software includes a cut-away view that gives Sailors the ability to look at internal mechanisms and components from any angle and even observe how internal components react to operator adjustments to the governor's controls. Instructors now use these new tablets to teach diesel generator Woodward governor maintenance inspection tasks exactly as they are performed aboard submarines.

Sailors have been training with 3D printed Woodward governors and Woodward Governor 3D AR tablets for over a year. They have performed various maintenance and operational inspections on the Woodward governors in their advanced maintenance training in ways that traditional methods simply could not reproduce.

Machinist Mate Auxiliary Petty Officer 1st Class Mitch Williams from Waverly, Iowa, who instructs submarine crews in an

advanced AR diesel maintenance course at NSS, Submarine Base New London, said, "These program tablets are great; they walk students through a sequence all the way from removal of the governor to installation, as well as testing and inspection."

Throughout the submarine training domain, innovative modern learning technologies such as 3D-printed components and AR technology are replacing outdated and static instructional methods that had limited ability to demonstrate complex concepts. The 3D-printed Woodward governor and Woodward Governor 3D AR learning technologies provided at submarine learning sites are two components that ensure that the Submarine Force remains ready to meet today's challenges while building highly skilled and technically proficient warfighters.

## Adaptive Training Learning Technology

Along with AR learning technology, the Submarine Force is using other new learning technologies to enhance proficiency in new ways. Sailors across the Submarine Force are using new Submarine Electronic Warfare

Adaptive Training (SEW-AT) technology that turns instructor-led training classes into interactive, hands-on learning experiences.

Electronic warfare (EW) is possibly the fastest growing field in submarine warfare. The ability to use the electromagnetic spectrum to our advantage and to limit its use by our adversaries is critical to our success in combat. To develop and grow this ability, U.S. submarine crews are training on new learning technologies available to the fleet.

Developed by the Naval Air Warfare Center Training Systems Division (NAWC-TSD) with funds from the Office of Naval Research's science and technology departments, SEW-AT is an innovative EW adaptive training technology system designed to improve crew performance when operating EW systems. It provides Sailors the opportunity to practice EW skills while reducing reliance on tactical training equipment and its associated costs and labor requirements.

NAWC-TSD designed and developed SEW-AT by drawing from multiple learning theories and principles. Using an AN/BLQ-10 emulator, it allows Sailors to practice standing watch during periscope-



## Summary of SMMTT characteristics

### The Present:

- Located at two larger submarine bases: New London and Pearl Harbor.
- SMMTTs are hard-wired interfaces linked at various NSS sites.
- Submarine crews interact with each other from two different SMMTTs that make head-to-head competition possible.
- Provides operators with realistic, game-based simulations of what they could encounter while on deployment, including inclement weather like rain, snow, fog and even dust.

### The Future:

- The Submarine Force is developing long distance SMMTT connectivity, allowing two submarine crews from different submarine bases to compete against each other.
- The goal is to test this capability in the fall of 2020 and debut it the following year.
- Long distance connectivity opens up several possibilities for competition in training, including potential playoffs and championship matches.

depth operations using a single PC-based, stand-alone training system. Applying scenarios derived from the Submarine Force's Continuing Training and Qualification Manual, the adaptive algorithms within SEW-AT observe operator actions and assess performance on criteria including safety-of-ship, report timeliness, contact classification, and emitter parameter changes.

ETSC Petty Officer 1st Class Patrick Parks, from Baltimore, Md., uses the SEW-AT computer as both an "A" school and pre-deployment training tool. Parks said, "This provides new Sailors their first experience in standing their prospective watch station and also allows submarine fleet Sailors the opportunity to refine and enhance their skills. SEW-AT provides adaptive learning to first accession students, junior ship personnel, and any Sailor new to electronic warfare."

SEW-AT responds by adapting scenario difficulty and provides immediate operator feedback using verbal cues by using a dynamic operator assessment. Feedback either challenges the operator with tougher scenarios or relaxes the difficulty based on operator performance. These adaptive instructional interventions avoid a "one size fits all" approach to training and, instead, provide tailored hands-on training based on an operator's strengths and/or weaknesses. When the scenario is complete, SEW-AT generates a detailed narrative along with scores in several skill sets.

SEW-AT contains more than 100 scenarios and covers every theater of opera-

tions. It and other similar training systems can inform instructors of specific student weaknesses, help students gain familiarity of a new operating environment, or simply get "reps and sets" in search and reporting procedures without occupying an entire trainer.

Across submarine training, modern hands-on learning technologies are replacing outdated and expensive instructional methods. The SEW-AT training provided at submarine learning sites ensures that the Submarine Force remains ready to meet current challenges while building relevant and capable warfighting readiness.

## Simulation Learning Technology

Developing modern learning technology training products that use robust, interactive, game-based simulation learning technology is essential to training the new generation of Sailors. In fact, the Submarine Force has created a game-based simulation training method integrated by the Submarine Multi-Mission Team Trainers (SMMTTs) simulation attack center, where submarine crews can fight against other crews in a game-based simulated battlespace.

The SMMTTs' attack center provides game-based simulation learning to enable submarine crews to rehearse tactical missions in environmental conditions and realistic scenarios found anywhere in the world.

In the undersea domain, there are winners and losers, and the losers often do not get a second chance. Combat readiness demands a mindset where there are no exercise orders, no warning notices, and

where second place means failure. It means that there will not be time to practice and build skills. The skills must become habits in order to be successful.

To help build this mindset and to put some incentive in training for combat, the Submarine Force recently implemented competition in training to encourage submarine crews to test their mettle in combat simulation scenarios. These simulated war games determine who can achieve a kill the fastest, sink the most tonnage, or even win in a fight against another crew in a connected SMMTTs simulation attack center.

Lt. Gregory Morgan from Detroit Mich., tactical instructor at NSS Naval Submarine Base, New London, who oversees submarine crews' combat training scenarios, said, "As the competition-in-training coordinator, I create the scenarios on the SMMTTs to challenge the Submarine Force and to instill the warfighter mind state. Warfighting competition in training makes training fun, but still provides a large amount of practice for life-and-death situations. After each computer-based scenario, our teams are debriefed on what went wrong and what went well, to improve teams and training in the future."

Submarine Force competition is organized in a manner similar to professional athletic leagues. The Submarine Force competition league is divided into two conferences, the Atlantic and Pacific. The two conferences are further divided into divisions, which consist of submarine crews in each fleet, connected by the SMMTTs' simulation attack centers. The commanding officer of the local submarine training facility serves as the umpire. Crews compete in seasons that are about six months long.

The matches consist primarily of combat scenarios in Anti-Submarine Warfare (ASW) and Anti-Surface Warfare (SUW) in a variety of formats: head-to-head, simultaneous and stand-alone.

The head-to-head competition is between two submarine crews who fight in linked SMMTTs' simulation technology. The crews can fight against each other or compete in the same battlespace.

In the Simultaneous format, two submarine crews conduct the same scenario at the same time in separate SMMTTs. The match is over when the first crew sinks its target while successfully evading the

remaining enemy forces.

The Stand-Alone format is similar to simultaneous, but crews conduct the scenarios back-to-back in the SMMTT. This method is ideal for smaller training facilities or training facilities that only have one SMMTT. The crews flip a coin to see who participates first, and the second crew cannot observe the first crew in battle. Whichever crew achieves its goal faster while living to tell the tale, wins.

Scoring the competition is relatively simple, and results matter. In combat, killing the enemy but being killed in the process of doing so is clearly not sustainable. Therefore, to win in the competition, a crew must kill the enemy and survive to fight another day or press another attack. Crews that get themselves killed are not rewarded with a win. It is possible that two crews can fight against each other and both end up losing. However, it is not possible for both crews to fight and for both to win. The crew that achieves the first kill and survives is the winner.

Each umpire coordinates with the squadron commanders to develop a schedule, score the matches, and track the results of each submarine crew. Umpires publish warning orders to identify the competitors, lay out the scenario, and schedule the competition. The umpires report competition results and lessons learned to the commissioner, who then coordinates with the type commanders (TYCOMs) to post results and update divisional standings on TYCOM websites. Throughout the competition season, submarine crews are divided into one of three categories:

**Rookie:** A submarine crew that has yet to participate in team competition.

**On-Deck:** A submarine crew that competed but was either killed or out-gunned by another submarine crew. Submarine crews whose matches result in a draw also receive on-deck status.

**Veteran:** A submarine crew that has achieved victory. A veteran team is typically removed from the normal pool of eligible teams for competition. However, they may opt to remain eligible to obtain more victories and bolster their divisional standing. However, if a veteran submarine

crew subsequently loses, they forfeit their veteran status for on-deck status.

Submarine crews are now doing battle in the SMMTTs simulation attack centers, to test their skills, and the competition is fierce! In a recent tournament, a crew that had just changed homeport humbled an entire waterfront, while another crew that drove down from a remote shipyard crushed a recent deployer. Crews that win plan ahead, show mastery of basics, and act boldly with calculated risk. Crews that lose underestimate their opponents, spend excessive energy on basic skills, do not follow fundamental doctrinal and procedural Target Motion Analysis tenets, or act recklessly. In all cases, the crews learn important lessons while enhancing proficiency.

**Virtual** simulation learning technology is an extremely useful training aid, providing high levels of training in a short period of time. Simulation allows for multiple repetitions, which aid in building competence. As Sailors gain proficiency, the training level can be elevated in complexity.

## Submarine Firefighting Learning Technology

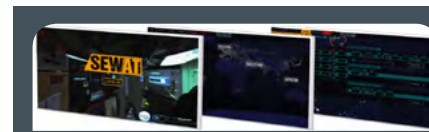
In the same way that Sailors gain proficiency on the SMMTT simulation learning technology, so can they gain training proficiency when fighting fires. Indeed, the next generation submarine firefighting learning technology-training facility is up and running at the Submarine Learning Facility in Norfolk, Va. This new simulation facility adds complexity and realism that is long overdue in submarine firefighting training.

The catastrophic results of the 2012

USS *Miami* (SSN 755) fire tragedy necessitated an assessment of submarine firefighting training, which identified that existing legacy trainers lacked capability in providing the necessary realism in firefighting training. They were typically single-level trainers that ran a few different scenarios and did not account for the close-quarters environment on the submarine. Most of these trainers did not get hot enough to provide realism to student firefighters during scenarios and they did not simulate fires that spread from a source to outboards and to the overhead. The next generation firefighting trainer (NGEN FFT) solves those issues.

The NGEN FFT simulation learning technology is a computer-controlled, gas-fueled, live-fire training system. This multi-level trainer simulates Class A, B and C fires in a realistic submarine environment. Instructors now can link and expand fires both vertically and horizontally to challenge submarine crews' responses to an expansive dynamic casualty.

The gas-fueled fires do not create smoke when burning; instead, they generate it by using non-toxic smoke fluid, which creates smoke to obscure vision, simulating what teams will experience in actual fires on a submarine. The increased smoke-generation, and the training system's ability to sustain higher temperatures for longer periods, provides greater authenticity to firefighting training than before. The current legacy trainer operates at 145 degrees, with an upper limit of 175 degrees. The NGEN FFT operates at 300 degrees, with an upper limit of 400 degrees. The NGEN FFT is reconfigurable with removable



Delivered prototype SEW-AT systems to SLC Schools in Pearl Harbor, Groton, Guam, Bangor, Norfolk, Kings Bay and San Diego



Stand-alone "lunch box" systems on board six deployed submarines



Collected usage data from 94 ESM operators on SEW-AT version 1.0 from SLC Schools (SEW-AT 1.2 usage data analysis in progress).



bulkheads in order to simulate racks and berthing spaces and includes a galley area with correct-size doorways.

These tight spaces allow firefighters to practice ingress into tight spaces and around corners while fully dressed in protective gear and fighting a fire with a fully charged hose. Teams that do not demonstrate proper firefighting techniques get to feel the heat when the fire flashes into the overhead, a truly impressive feature that gets the team's attention quickly.

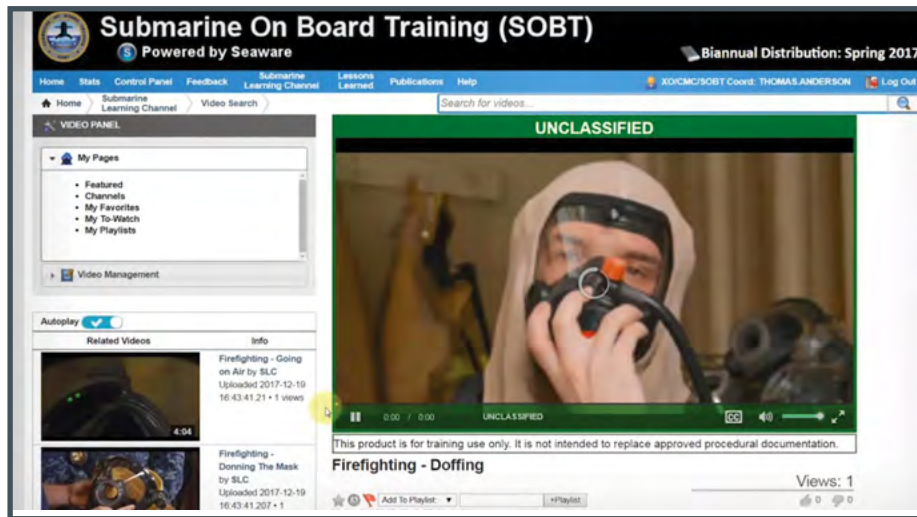
The NGEN FFT was developed by NAWC-TSD, NAVSEA Submarine Training Systems (07TR) with consultation by Atlantic and Pacific TYCOMs, and the SLC.

NGEN FFT firefighting training capability that safely delivers the simulation necessary for submarine crews to build their skills in fighting complex submarine fires. Training on the NGEN FFT enhances warfighting readiness through the realism inherent in the trainer and by providing a first-hand appreciation of the skills necessary to extinguish a potentially devastating submarine fire.

### Computer-Based Learning Technology

Another example of how the Submarine Force is applying technology to enhance teaching and support learning and assessment to prepare Submariners for battle is by using Submarine On-Board Training (SOBT) computer-based learning technology.

Experienced Submariners may remember when SOBT consisted of laser discs as large as vinyl records and cassette tapes.



Seaware SOBT online learning management system technology course platform.

Since then, SOBT has evolved to respond to today's Sailors' training needs and now provides modern learning technology to supplement traditional instructor-led training classes and, in some cases, has replaced brick-and-mortar schoolhouse courses with an interactive, hands-on, simulation learning experience designed to train combat-ready warfighters.

Today most of us have a home computer and a smartphone with information available at our fingertips. We log into the computer and have ready access to email, websites, reference materials or projects because the computer recognizes our profile and leaves bookmarks to return us back to where we stopped the video or left the webpage. We also watch short videos to help us fix our cars or appliances. The team at SOBT recognized the power of easy access to information and has incorporated

these simple yet powerful capabilities into the program to place training and reference materials at Sailors' fingertips.

SLC and the Naval Undersea Warfighting Center (NUWC) deliver updates to SOBT each spring and fall, reliably delivering content and other materials to the entire Submarine Force and ensuring that the Force is using the latest training and reference materials available.

Sailors can access SOBT material through the Seaware learning management system, which is accessible on computer desktops connected to the submarine network. Seaware organizes the material and connects to each Sailor's account, allowing each Sailor to customize the Seaware system to fit his or her needs.

In addition to traditional SOBT interactive multimedia instruction modules, Seaware allows Submariners to access the Submarine Learning Channel, which contains more than 300 short videos that provide explanation or demonstration of a wide variety of tasks. This enables a subject matter expert to demonstrate through a short video a critical part of a procedure or techniques that are difficult to describe in a technical document. The videos provide simple yet powerfully effective training on tasks or concepts without having to sign up for a course and sit in a classroom.

The quality of videos continues to improve as the SOBT team recently updated video development standards with the assistance of experts in the video production field. Rather than showing instructors giving lectures in a classroom, these three-

to-five-minute-long videos consider the perspective of the viewer and are generated on topics based on requests from the fleet. The instructors in the videos are not actors, but actual Submariners who are experts in their fields and are properly trained to film these videos.

The Submarine Learning Channel environment is a simple and familiar construct that allows Submariners to identify favorites, generate a playlist, or assign videos to others to support a training plan. They are deliberately bite-sized but hard-hitting and targeted to specific pieces of equipment or concepts. With videos hosted in SOBT's Seaware system and accessible from any laptop aboard, the Sailor is ready to watch when it fits his or her schedule.

The content in SOBT's Interactive Multimedia Instruction (IMI) modules is detailed and reference based. In most cases, the student must pass a test to earn a completion certificate. Recently, the TYCOMs identified specific SOBT products that, when successfully completed, can allow commanding officers to grant credit for knowledge

factors on some qualification cards. The team at SOBT is continuing to evaluate their IMI content to determine where Sailors can meet other qualification standards.

In addition to the material developed by the SOBT team, Seaware also delivers over 200 IT professional topics. These topics provide the necessary knowledge certifications for Electronics Technician Communication – Submarine (ETR) Sailors to convert to Information Systems Technician – Submarine (ITS) Sailors without requiring connectivity to an off-hull network. These products also provide continuing educational units (CEUs) to all ratings of our cybersecurity workforce.

Seaware also contains links to reference materials essential to the Submariner. Current tactical doctrine published by Undersea Warfighting Development Center, (UWDC), intelligence products published by the Office of Naval Intelligence (ONI), and lessons learned published by TYCOMs are included with each SOBT update. Submarine crews no longer have to download publications,

### SOBT Resources

- 300+ Education Learning Videos.
- 600+ Interactive Learning Courses.
- UWDC and ONI Publications.
- Lessons Learned Messages.
- Cyber Security Workforce Training.
- Training Feedback/Requests.
- Email for Feedback: E-mail to: NWLSOBTFEEDBACK@NAVY.MIL

search the network, or be concerned with having the right version of doctrine because the information is at each Sailor's fingertips through Seaware.

The SOBT team knows it must engage the fleet; bottom-up feedback is best when it comes directly from the afloat Sailor. SOBT's chiefs and officers who are developing training priorities want to hear the fleet's voice to help steer their efforts. Seaware facilitates SOBT feedback using email, comment sections, and usage metrics to evaluate the fleet's needs. The feedback goes directly to the active-duty Sailors managing SOBT product development. The SOBT team also visits each submarine homeport annually to provide assistance to crews, answer questions and get feedback on SOBT products.

The ability to deliver high-quality training and reference materials uniformly across the Submarine Force through SOBT and integrate them into the Seaware learning management system is a critical enabler for combat readiness. The training and materials available ensure consistency in delivering training products, reducing crew time necessary to find reference materials and providing opportunities for training, anywhere, anytime.

By engaging our Submarine Force, both new and experienced, in the modern, hands-on, learning technologies discussed here, Sailors are being afforded the exciting opportunity to explore the newest depths of computer-based learning technology currently being taught throughout the Submarine Force. Submarine crews will now be able to more readily develop relevant warfighting readiness skills and become better prepared for the fight.



ETSC Petty Officer 1st Class Patrick Parks, standing, demonstrates the SEW-AT computer workstation with ETSC Petty Officer 1st Class Benjamin Osberger.

### NGEN FFT Technology Features

- Automatic fire re-ignition capability.
- LCD touchscreens to create and store training simulation scenarios.
- Central PC control room with customized burn building floor plan.
- Room-to-room programmable fire growth.
- Programmable rate of fire growth over time.
- Expanded fire control parameters.
- Agent application detection.
- Operates at 300 degrees and shuts down at 400 degrees.
- Intuitive advanced diagnostics for system fault identification and correction.







# Junior Officers of the Year "Deep Dive" into the Washington D.C. Sub Culture

The Junior Officers of the Year (JOOYs) for 2018, selected by their squadrons, were accompanied by their significant others for various events, including a meeting with the Chief of Naval Operations (CNO) and the Washington D.C. area Submarine Birthday Ball. The camaraderie in the group was instant; despite our various backgrounds—688, SSGN and SSBN, in drydock and operational, engineering and weapons and navigation—we shared similar experiences. It was a refreshing time to appreciate the work we had put into a job that can be all-consuming and to step back and see how our individual roles fit with the mission of the Submarine Force and the Navy at large.

Monday morning began with a trip to the Pentagon and a lunchtime briefing by Vice Adm. Merz, Deputy CNO for Warfare Systems (OPNAV N9). He emphasized the need for interoperability and collaboration between the branches of the military as well as coordination with allies as we prepare for potential great power conflict. Cmdr. Gene Severtson, Unmanned Systems & Future Capabilities Branch Head at OPNAV N97, then briefed us on exciting developments in Undersea

Unmanned Vehicles (UUVs), upcoming modules for the *Virginia*-class submarine, and *Columbia* and SSN(X) development and construction.

On Monday evening CNO Adm. Richardson and his wife, Dana, hosted the JOOYs and significant others for "mid-rats" and drinks at the historic Tingey House on the Washington Naval Yard. The Richardsons shared their experience of raising five children through a Navy career and prioritizing staying together as a family through 21 moves. They also shared the treasures they have accumulated during their travels, from the submarine warfare insignia of numerous countries to paintings from their tours in Italy. In a final toast in the greenhouse, Adm. Richardson emphasized the need for great leaders within the Navy and recognized the contributions of both Submariners and spouses.

On Tuesday the symbolic architecture and interior design of the Library of Congress reminded the JOOYs of the importance of scholarship and history during a docent-led tour. Thomas Jefferson, recognizing the necessity of continued and wide-ranging learning, donated his library to create this now-indispensable institution. We were reminded of our need to continue learning, starting with the basics of the engineering plant, then how to drive and fight a submarine, and now continuing with strategic plans and preparations for various potential futures in this great power competition.

After the tour, the group walked through the extensive Capitol tunnels to visit with Rep. Joe Courtney of Connecticut, whose district includes Naval Submarine Base New London and Electric Boat. He congratulated the JOOYs and their significant others on their accomplishments before going to witness a vote on the House floor.

On a crisp Wednesday morning, president of the National Defense University (NDU), Vice Adm. Fritz Roegge and his wife, Julie, welcomed the group to NDU, where the theme of education continued.



*How do you remind outstanding lieutenant Submariners, who are used to standing Officer of the Deck and leading a division, of how big the Navy is and the role of submarines in national defense?*

**Bring them to Washington, D.C.**

They explained the role of the university in professional military education and the importance of that education. Though political administrations change and alliances shift over time, military educational institutions maintain a mutual respect for the craft of warfare and for one another. He welcomed questions from the group,

which concerned career progression, the role of education in determining assignments, and personal experiences while in the Navy.

Captain Michael Majewski, Nuclear Propulsion Program Manager from N133, hosted a brief discussion to understand the concerns and recommendations of the JOOYs in a format similar to the biannual Junior Officer Symposium. He was receptive to concerns about in-port maintenance requirements and gaining underway experience during extensive drydock periods.

That afternoon Adm. James Caldwell and his wife, Kim, hosted the JOOYs for a delicious lunch at Naval Reactors on the Washington Navy Yard. They candidly explained their long journeys with the Navy, starting from childhood—Kim was the daughter of a SeaBee captain and the Admiral was the son of a submarine captain. They married the same month that he graduated from the Naval Academy, which was followed by his numerous tours at sea and on shore. Kim offered advice on leading the wardroom in coordination with the Ombudsman and how important attitude is in the success of making a home and



Vice Admiral Fitz Roegge welcomes the 2018 Junior Officers of the Year to NDU.





Admiral James Caldwell and his wife Kim pose with the 2018 Junior Officers of the Year.

friend group in various places. They spoke of the disconnect in sources of energy that introverts and extroverts can have in marriage, which resonated with many of the couples present. Both the JOOYs and their significant others appreciate the candor with which they shared their experiences and answered numerous questions that focused more on the life of submarine couples and less on the technical aspects of the job.

That evening many local 1120s gathered in Crystal City for a prime opportunity

for submarine officers across all levels of experience—from division officer to retired admiral—to share experiences, seek advice, connect over tours on the same boats, and celebrate this vocation in a low-key venue.

Thursday morning was a unique opportunity for a brief by the Deputy Director, Operational Support for the CNO (N2/N6F21), Cmdr. Greg Crosby, that featured recent deployments in various theaters. The brief came alive with sea stories since several of the JOOYs stood watch on these missions vital to national security.



The JOOYs then shared lunch with Vice Adm. Richard, Commander Submarine Forces, in the Marine Corps Dining Room in the Pentagon. With the backdrop of bullet-scarred helmets and historic swords, Vice Adm. Richard emphasized the need for warfighters in the Submarine Force and his belief that there may be a shooting war during the time that the officers who sat with him returned to submarines as department heads. He listened to recent developments on the waterfronts, such as competition training that pit one crew against another in attack center simulators, and he discussed his philosophy concerning

## 2018 Junior Officers of the Year

CSS 4 - Louis Kjerstad  
USS *Montpelier* (SSN 765)

CSS 6 - Jordan Rettie  
USS *Newport News* (SSN 750)

CSS 12 - Justin Liedel  
USS *San Juan* (SSN 751)

CSS 16 - Erica Leinmiller  
USS *Florida* (SSGN 728) (B)

CSS 20 - Michael Naclerio  
USS *Alaska* (SSBN 732) (G)

CSS 1 - William Chilton  
USS *Greenville* (SSN 772)

CSDS 5 - Gregory Poser  
USS *Connecticut* (SSN 22)

CSS 7 - Benjamin Canfield  
USS *Columbia* (SSN 771)

CSS 11 - Thomas Dowd  
USS *Alexandria* (SSN 757)

CSS 15 - Ryan P. Keyes  
USS *Oklahoma City* (SSN 723)

CSS 17 - Jason Koncsol  
USS *Pennsylvania* (SSBN 735) (G)

CSS 19 - Brian Davenport  
USS *Jacksonville* (SSN 699)

CSP - Michael Park  
USS *Emory S. Land* (AS 39)

tactical nuclear weapons. His inspirational tone was refreshing, reminding us that we do indeed prepare for battle, though that often has taken the form of signing hundreds of maintenance forms and slogging through yet another day at the simulator.

After piling into two vans, we spent the hour drive to the Lockheed Martin facility in Manassas, Va., talking submarines. We compared our times aboard and shared stories ranging from intrepid actions while on mission to mundane maintenance to shore tour detailing challenges to the loneliness of not hearing from loved ones for weeks or months. I realized about halfway through the week that, although many of our stories were ostensibly about tedious, challenging, boring, or frustrating situations, we obviously love what we do. Once we arrived in Manassas, we walked through the development bays for the newest sonar and fire control systems for both submarines and surface ships. We

saw them in action as testing progressed, and marveled at future photonics masts. We also toured the production bays where current systems are tested and sent to the fleet. It was an eye-opening experience, particularly for officers serving on boats with older systems, and an occasion to provide feedback from real users.

In a rare opportunity on Friday afternoon, the group toured the East Wing of the White House, to include the Diplomatic Room. Two Secret Service officers, as well as Submariners Cmdr. Matt Thatcher and Lt. Andrea Weiss, offered historical and humorous facts about the various rooms, their décor, and their functions over the years as they guided the group through the building. The President's butler, a retired Navy Master Chief who served aboard both surface ships and submarines, provided the group with presidential chocolates.

The week concluded at the Washington, D.C. area Submarine Birthday Ball. Adm. Richardson remarked on what a tight community the Submarine Force is, citing JOOY Lt. Brian Davenport who served aboard the same boat that Adm. Caldwell previously commanded. He remembered the many boats and Sailors who gave their lives in service, as honored in the Tolling of the Boats. He then looked forward to the continued success of the fleet, which now includes female Sailors and officers, such as JOOY Lt. Erica Leinmiller, and teased her husband, Lt. Micah Dose, for continuing in the submarine tradition of marrying up. He described with vigor the vital role that the Submarine Force plays in

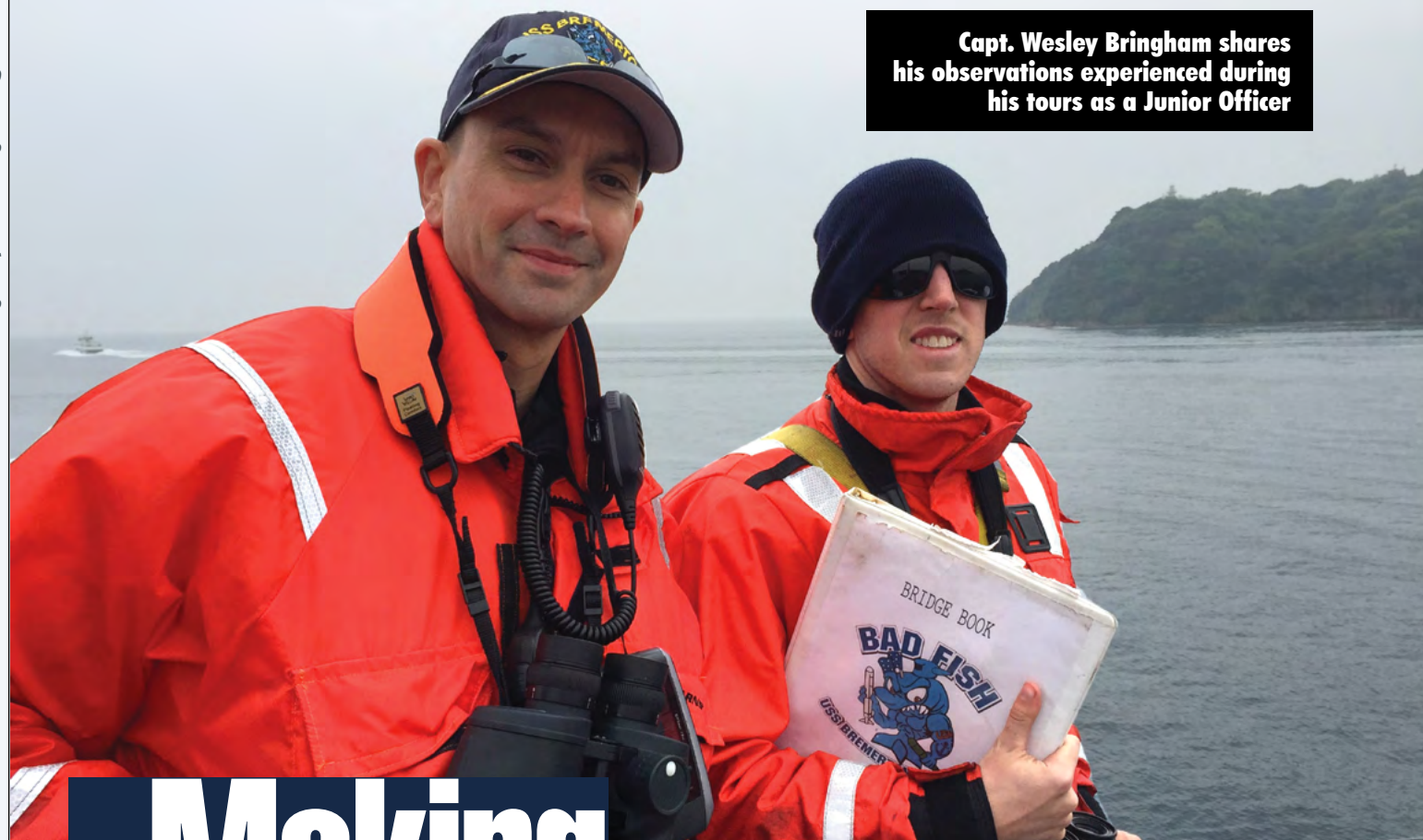


national security today and the continued need for high-quality officers and Sailors to continue performing the hard missions, "alone and unafraid." The dancing commenced with notable contributions from Vice Adm. Richard's wife, Lisa, Adm. and Mrs. Caldwell, Norwegian Naval officers, and the JOOYs.

The week provided an opportunity to celebrate excellence in our division officers, to meet and discuss both work and home life with several of the most senior officers in the force, and to recognize both the challenges and the opportunities that face the Submarine Force and the Navy as a whole. We departed at the end of the week with new friendships and a renewed appreciation for the important role the Submarine Force plays in national defense.







**Capt. Wesley Bringham shares his observations experienced during his tours as a Junior Officer**

# Making Your JO Tour Count

One (former) submarine CO's thoughts on being a great submarine Junior Officer:

**"Put more into life than you expect to get out of it. Drive yourself and lead others. Make others feel good about themselves. They will outperform your expectations, and you will never lack for friends."**

— Rear Adm. Gene Fluckey,  
WWII Medal of Honor recipient

I've weathered some rough seas during my naval career, which has informed my opinions on how young officers can succeed. Simply stated, I want you to accept two fundamental challenges: learn to fight your ship and lead your Sailors.

Getting the most out of your JO tour is a contact sport. Put yourself out there. Try hard. Don't be afraid to fail; it won't be that bad, and you will be forgiven. Then, try again. This is what your JO tour is all about—learning about yourself and what specifically works for you.

The following are some "knows" and "dos" to help you fight and lead. Not everything below will resonate yet, but I suggest you put this article in your "leadership toolkit" (everyone should have one) and read it again later in your tour. Knowing your ship, Sailors, and boss will be key to your success as a Submariner. Truth in advertising: I didn't always do these things, but I wish I had! I made some mistakes as a JO, and most of this I learned from the school of hard knocks.

"But Captain, I am not planning on making this a career." Doesn't matter. The skills needed to fight the ship and lead a division or watch section are life skills and highly valued outside the Navy.

When I was a JO, my CO once asked if I aspired to command. The question caught me off guard. I wasn't sure I really wanted to go to command or even stay in after my JO tour. I responded half-heartedly that I didn't think I knew enough to command. He laughed and said, "of course not, you're only a JG!" He went on to explain that, in your Navy career, what you learn today prepares you for success at the next level. Over the years, I saw that he was right! Your training to become a Submarine CO begins with your commissioning and continues every day that you are in uniform, preparing for the moment when you say, "I relieve you."

My goal for each of my JOs: finish your tour ready to walk across the pier to another ship, equipped to perform at the next level—leading your own watch section and serving as a department head. By the time you leave, if you know your ship, Sailors, and boss and work to understand what to do as a leader, then you will excel as a JO!

## What to know

As a new submarine officer, you will learn a new culture and language, leadership and management basics, new watch stations, running a division, and managing programs. You will feel overwhelmed at times. Keep after it! Eat the elephant one bite at a time.

Know your ship. Learn the basics first. When qualifying, stay a little later if needed. Come in on some weekends. Learn what you need to, and then go get your checkout or take your exam. I tended to "polish the cannonball," over-studying unimportant

things. Ask for help if there is a roadblock, if you don't understand a concept, or you are in the shipyard and can't get your practical factors done. Once you are qualified, it is purely a license to learn—become a true expert, lead your teams, and see what works and what doesn't.

When I reported aboard my first ship, my ship's leadership put me straight into engineering qualifications, as expected, and told me not to worry about forward quals at all until I had qualified EOOW. This was horrible advice. When you get aboard, come up with a plan to focus on

ready to safely execute the task, have the courage to say so and take the time needed to do it right—the first time. Tell your department head if you do.

Early in my first tour, I went to the bridge as JOOD when getting underway from Pearl Harbor. One of the JOOD's jobs was to operate the AN/PSN-11 handheld GPS, a military GPS unit that was about the size of a mailbox and completely unintuitive. Before I went to the bridge, someone showed me some basic button pushing, but I didn't really understand how to use it effectively. Most important for the



**"You are responsible for the success of your Sailors. Learn their strengths and weaknesses, and help them to overcome them. Your primary job is to remove obstacles so that your team can get the job done."**

qualifying EOOW, but don't neglect getting your reps in control and on the bridge. Seek balance in where you spend your time so that you can grow multiple skills simultaneously.

You will earn the crew's trust by working to become the expert. If you are the watch officer for an evolution, learn the evolution backward and forward and ensure that your team members know their roles and responsibilities and are ready to perform. This requires a lot of in-the-weeds details—watchbill, walkthrough, lessons learned, etc. Keep yourself in the driver's seat; anticipate and decide if the team needs more training to perform the event. If your team is not

CO, I didn't know how to find cross-track error. While piloting out, he asked for this bit of data, and despite my best efforts, I couldn't figure it out. The CO got on the 27MC to chew out the NAV because the GPS unit "didn't work right." Buttchewings generally roll downhill. When I got down from the bridge, the NAV was there to tell me just what he thought of my preparations for the maneuvering watch. In retrospect, I feel that the command could have done a better job explaining the expectations for me on the bridge. While I fixed this in subsequent tours, the lesson I took away stuck with me: you are responsible for your own preparation. You should



also ask questions from someone who has done it before.

**Know your Sailors.** I received some more bad advice on my first boat. My leaders told me, “Your job is to qualify. Let the Chief run the division.” Wrong! Navy regulations, the Submarine Standard Organization and Regulations Manual (SORM), and the Engineering Department Organizational Manual (EDOM) are unambiguous about the responsibilities of a Submarine Division Officer. Clearly, qualifications will take most of your time at first, but you cannot neglect your division. I started out several steps behind because I did not get in my chief’s hip pocket right away and learn how to really run my division. Don’t make that mistake.

Step 1 to being a successful DH is learning how to run your division as a JO. First lesson: You are responsible for the success of your Sailors. Learn their strengths and weaknesses, and help them to overcome them. Your primary job is to remove obstacles so that your team can get the job done.

If any of your Sailors are struggling, whether in qualifications, adjustment, mentally, physically, or spiritually, your job is to get them the necessary help. Part of this is knowing when they are struggling, even if they don’t tell you. Inform your DH, XO, or CO if someone is deserving of public awards, recognition, or shout outs. Track request and leave chits, schools requests, etc. Don’t allow requests to be held up in routing; these things are important to your Sailors.

Bring problems your Sailors are having to command leadership, and have a recommendation on what you think will help. I recall a JO that found out that one of our Sailors’ racks had hydraulic oil leaking into it, and onto the Sailor who was sleeping in it. When the LT found out, he immediately put the issue in the green book, brought it up to A-division, and let the CO, XO, COB, and ENG know about the problem. The Sailor should have brought this up and had it fixed but didn’t feel comfortable “complaining.” The LT, however, had no qualms about raising the issue. You can play a big role in improving quality of life aboard.

Wasting your people’s time is unacceptable! If your people are having to wait

around before getting to work because of tag-outs or needing permission, then fix it. I once had a division where Sailors would show up to quarters in the morning, wait around while the Div-O and chief finished up at officer/LPO call, and then would get their assignments for the day. In this division, it was common for Sailors to get assigned complex maintenance at 0830; spend the morning researching the maintenance, writing the tag-out, and prepping the WAF; then try to get the duty chief and duty officer, who were often detained by training, meetings, or lunch, to review the tag-out; and finally getting the maintenance approved at 1400. The problem is that it was a four- or five-hour maintenance evolution. After completing the maintenance and cleaning up the worksite, the Sailors were leaving well after both dinner and dark, some with duty the next day. That was not a good place to work.

Plan instead for the division to leave at a reasonable hour. Sailors should know what they are doing the next morning when they leave for the day so that they can show up to work and start immediately. All these efforts build morale and make your ship more effective. When the time comes that you must work an 18-hour day on a weekend before deployment, the team will know that the command did not take it lightly, and that their efforts are valued and essential.

**Know your boss.** Learn to communicate with your boss. Get to the point! Think about what you will say ahead of time. If briefing maintenance or an evolution, explain what you are asking for early in the conversation, and then give background as needed. Make sure you know the answer to more than just the initial questions. Read and understand the references and bring them with you to brief the chain of command. Learn to ask your chief and Sailors the right questions, anticipating what the CO or DH will ask. Learn how to deliver and receive bad news. Bad news doesn’t get better with time, distance, or shielding.

Figure out what your boss (the DH, XO, or CO) expects. Whether giving a morning update or checking out for the day, try to make their jobs easier by anticipating their questions and answering them up front. Know what your leaders are tracking. Anticipate tracking and

completing the task before it gets on the DH’s tracker. This allows you to “play a level up,” working your boss out of a job. Don’t wait to be told what to do; figure out what needs to be done and go do it. Don’t fear getting ahead of your bosses; they will respect and appreciate your initiative to get the important things done without having to tell you.

You will find yourself writing awards, evaluations, radio messages, and reports that will go to the CO. Write clearly, in the active voice, with good grammar and spelling. Avoid repeating mistakes when writing for your chain of command (this is a good self-preservation tip). Go find the final product that gets released and see how the message or eval changed or how the writing flowed, especially if you weren’t present for the final edits. Don’t allow yourself to just be the typist; understand and discuss content, tone, and the message that the ship is sending off. A ship’s reputation is in large measure built on its messages, so learn to write well. Ensure that the reader will understand your message without you being there to explain it.

### What to do

**Lead yourself.** Your energy can help the entire ship to improve. Never give up. Be “all in” as a JO on the USS Anycity. How you react when things go wrong or if you make a mistake will affect how the Sailors in your division or your watch section react and perform. Your Sailors will notice your level of energy and your attitude. The JOs can set the tone for the wardroom and the ship.

Our job as leaders is to take action on the things that we can control and be ready to respond—positively—to the things we can’t. While we may at times feel like victims, we are winners, never victims. Push past it. This is most important when things don’t go your way, whether making a mistake that requires a critique, performing poorly on an inspection, or not performing to the high standards that the Force expects. Winners don’t complain or make excuses; they figure out what went wrong and how to improve. Solve problems and offer solutions.

I went through a stage as a JO where I spent some time feeling sorry for myself. I was in three-section duty rotation as CRA, still in OOD quals, had all the pre-deploy-

ment and Arctic training to do, and the ENG had me working on a project to create a Chem RADCON study guide. I felt very behind, and I was mopey and grumpy. Because of this, at the end of a duty day I snapped at one of the DHs when he asked why I hadn’t completed one of my required post-watch reports. My XO called me out and told me that my attitude was bringing down my division and my watch section, and it was a drag on the Wardroom. I wasn’t happy to hear it, but when I brought it up later with my watch section, hoping that they would commiserate with me, they agreed with the XO. After that, I began to learn that my job was to get over the feeling that I had been wronged and try to improve the situations that I could control. When I shifted my attitude, it shifted everything. And I shouldn’t have complained to my watch section.

The Wardroom is a great place to discuss warfighting, ship driving, and leadership. Leave some time for fun, but make sure that you are contributing to excellence in your command. Stop periodically and reflect on your performance, good or bad. Ask for feedback from your chain of command, your peers, and your division. Always seek improvement. When I was in command, my JOs were superstars. They spent time in the Wardroom talking about leadership, including articles that they had read, ideas for improving performance, and lessons learned. These types of discussions are great because they make the whole ship better. If it’s not happening on your ship, take the lead to start it on your own.

If you are assigned to build an operational plan, own it. Train the team, conduct a pre-evolution brief, perform the operation, then assess how you did—so that you can do it better the next time. This process is the best way to become a subject matter expert. Integrate sonar, navigation, comms, and engineering department into your plan. You will find that you are able to see the “big picture” and help others to perform to their potential. Others will know their piece of the pie, but you will be the one that helps tie it together. Who knows? You may be called on to execute the plan...on short notice...with the trim pump tagged out...and with a team that has not performed the evolution since POM workup. That’s exactly

when a Lt. j.g. can save the day.

When our ship conducted our SPT, we bombed our evaluated ASUW trainer. When working on the upgrade, we assigned one of our JOs as the ASUW planning officer and his hard work helped us do a 180! He developed a plan that included a valuable intelligence assessment tool to allow us to prioritize targets effectively. His plan also included training on ASUW-specific duties and responsibilities, which allowed every team member to contribute to decision-making data flow. Based on his ownership and our practice,

Leaders onboard, including the division officer, must set an environment for integrity. How do you react to bad news? Is it costlier to tell the truth or to cover it up? Accomplishing the mission at all costs (or “just getting it done”) while breaking the law or violating protocol, policy, or procedure is simply not okay. If you find yourself saying or hear others saying things like, “just make sure it gets done” or “I don’t care how it gets done” you should hear alarms going off in your head. A division officer can, and ultimately must, help the chain of command identify where



**“Lead your watch section. As a watch officer, you are a player-coach, responsible for your own performance and that of your team. Look ahead and plan the watch with your team. Figure out what you don’t know as individuals or as a team and come up with a study plan to fix it.”**

months later we had one of the highest ASUW grades in the PAC. That JO led ship-wide improvement and made a difference!

**Lead your Sailors.** The most important concept that you will communicate to your Sailors is the “why” of what we are doing. As a JO, you have daily access to ship’s leadership. Use this time to understand and discuss command decisions—the “why.” If you don’t know the why, then ask. Make sure that you do understand so that you can share that message. You are the direct link between the CO and the Sailors. It is your responsibility to carry the command’s message to your division and your watch section. Take that responsibility very seriously.

leadership guidance or pressure may force a moral or ethical shortcut. There is always way too much to get done on a submarine. If your team feels overwhelmed and can see no path to the finish line other than cutting corners, they will be tempted to do so.

We get stuff done correctly by planning ahead and ensuring that there is enough time to get the job done. If you run into a situation where there isn’t enough time, bring it up to the chain of command. This takes courage, particularly if the delay is due to a failure in planning on your part. Stand tall. As a team, you may come up with another plan, or the CO may decide to defer maintenance or that you can’t get under way on time (not good, but not the

Photo by Mass Communication Specialist 3rd Class Charles D. Gaddis IV



end of the world). You can avoid this situation by starting your planning early and using your lifelines to shipmates who have successfully completed the task before.

Don't be overly sensitive to your Sailors' complaints, but be ready to be their advocate. Listen to them. It is a truism that, when they stop complaining out loud, they likely feel that no one is listening or cares enough to help with their problems. Never complain in front of your Sailors, especially about your chain of command! This will undermine your ability to get things done, and they will actually respect you less for your overt disloyalty. You don't have to defend the command if you don't want to, but piling on to a gripe session is never helpful.

Build your team up, don't tear them down. Sometimes members of your division will make fun of a teammate, perhaps one who is struggling or who acts differently than other crew members. Don't allow that to happen in your presence, and above all don't join in. Stand up for those who can't stand up for themselves. Leaders do the right, unpopular, and uncomfortable things because they need to be done.

**Lead your watch section.** As a watch officer, you are a player-coach, responsible for your own performance and that of your team. Look ahead and plan the watch with your team. Figure out what you don't know as individuals or as a team and come up with a study plan to fix it. Let the NAV and CO know if the plan in the night orders doesn't work and recommend a change.

We are a results-based organization; mission accomplishment is our bottom line. If you don't get the job done, it doesn't matter how hard you tried or how bad you wanted to do well. To avoid these failures, you must build a team that learns from mistakes. You can do this by setting an expectation that you always "hotwash" with your watch section, looking for ways to identify small problems, keeping them from recurring and becoming bigger problems. Sometimes there is a tendency to assess from a "feeling" or compare to "how we did it last time." Resist that. Go back to the base references and formally assess how your team performed consistent with the procedure or guidance. Know the right answer and the delta. Finally, write down

what you learned and make sure to apply it next time.

You'll spend long midwatches with your watch section. Use this time to run through the playbook (which makes the watch go by faster). Discuss casualties and how you would respond if something happened right now. Talk about things that your watch team has not done well and how you can get better.

Know the boundaries with your Sailors. You will spend a lot of time in Maneuvering with two or three Sailors your same age and who, but for various circumstances, could trade places with you. Don't fall into the trap of being too familiar with the enlisted crew. Don't be the "cool" watch officer who lets standards slip. You are selling the command, your watch team, and yourself short if you do.

That also goes for liberty. Maintain your boundaries. Avoid overly familiar relationships such as being drinking buddies with your Sailors. Be a professional. Don't be domineering, but be firm in maintaining watchstanding formality, proper communications, procedural compliance, and watch team backup.

**Lead your division.** Communicate with your team. Go to divisional quarters and discuss where the command is headed. You should know this from your interactions in the Wardroom. Put out important information from message traffic or the squadron, talk about the schedule, and identify issues across other divisions or other departments that affect your division. Make sure you are on the same page with your chief before you go to quarters. A good way to plan ahead is to keep a notecard or section in your notebook to track things to put out. If you are often surprised by items that come up such as stores loads, GMT, or off-hull trainers, then look in the mirror. You probably aren't communicating enough. Keep your ear to the ground. Listen up in your officer/LPO call. Talk to your XO, DH, COB, or department chief to ensure that you know what is coming, are actively planning to succeed, and make sure that your division is ready.

Learn to run a division and the technical aspects of maintenance from your chief. Don't be afraid to question whether you are doing business the right way or the best way. If something doesn't seem right,

it may not be. Your fresh eyes may see a problem that others have missed.

Push evals, awards, products, or reports up. Don't wait for your DH or the XO to ask for them. Come up with a system to be organized and track what you owe. If you miss a deadline or your team doesn't perform to standards, own the problem, come up with a plan to train and get better.

If you are like me, speaking in front of a group is not natural, yet it is an essential skill for a Navy officer. Look for opportunities to practice; give training, address your division, department, or crew on your collateral duty or on topics of interest to your division. Outline what you plan to say on a note card. Ask for feedback on how you did, and practice!

## Conclusion

There are my thoughts on being a great JO. Fight the ship and lead your Sailors! Know your ship, your Sailors, and your boss. Set the example for your Sailors, watch section, and division and then live up to the example you set. It's not a simple job, but I found it to be very rewarding. Don't expect all your days to be rosy. You may feel on top of the world one day, and the next you'll feel that you have made the worst (leadership, watch standing, program management) mistake in the history of the Submarine Force. This is normal. Get over it. You have some great coaches and teachers out there with your DHs, your chief, the XO, the CO, and your fellow division officers. Ask for feedback. Ask for advice on issues that you are tackling. Learn from your bosses, good and bad. Most of all, own your division and your watch section. Get out there, push yourself, drive fast, and make your ship the best on the waterfront!

## Navy Announces FY20 Senior Enlisted Advancement-to-Position Selection Board

Active duty senior enlisted Sailors looking for their next billet in a higher paygrade will soon have the opportunity to get a jump on the process thanks to the Advancement-to-Position (A2P) selection board, the Navy announced July 17.

The Fiscal Year (FY) 20 Senior Enlisted A2P selection board, announced in NAVADMIN 162/19, is a pilot program where active-duty senior enlisted Sailors apply for specific, priority billets listed in the NAVADMIN, and if selected, are temporarily advanced to the billet paygrade. Those Sailors must still be selected for advancement via the annual Senior Chief or Master Chief Petty Officer (SCPO or MCPO) selection boards to be permanently advanced.

The selection board is scheduled to convene Sept. 9. Electronic applications must be submitted no later than Aug. 7. Applications submitted via mail must be postmarked no later than Aug. 7.

To be eligible for the board, Sailors must meet the following criteria:

- Must meet all eligibility requirements for the regularly scheduled FY20 Active Duty SCPO or MCPO advancement selection boards.
- Applicants must sign and have their COs witness a NAVPERS 1070/613 with the following statement: "I understand that by submitting an application for consideration by the FY20 Enlisted Advancement-to-Vacancy Pilot Selection Board, I am certifying that I am assignable to any billets for which I applied and will execute orders to those billets if directed."

Applicants must meet all prerequisite requirements detailed in NAVADMIN 162/19 for the specific billet(s) to which they are applying.

Interested Sailors who have submitted voluntary Fleet Reserve/retirement requests to NPC are not eligible for this board.

For a list of all available billets and prerequisite requirements, read the NAVADMIN at [www.npc.navy.mil](http://www.npc.navy.mil).

**UNDERSEA WARFARE Magazine has created this section in recognition of the enlisted Submariner—but we want you to get involved in the success of this effort. We would like you to send us "Community Outreach," "Liberty" photos, and/or "Homecoming" photos of families being re-united as the crews return. Send your submissions to the Military Editor via email to: [underseawarfare@hotmail.com](mailto:underseawarfare@hotmail.com)**



# SailorsFirst

## Continuous Applications for Enlisted Women in Submarines Being Accepted

The Navy is now continuously accepting applications for female enlisted Sailors in pay grades E1-E8 to convert to Submarine Force non-nuclear trained ratings, as announced in NAVADMIN 159/19, July 15.

The Non-Nuclear Submarine Enlisted Community Manager (ECM) will process applications in the order that they are received and there is no specified due date. The Navy previously only accepted applications in windows based on community needs and the initial integration of individual submarine crews.

The Non-Nuclear Submarine ECM will consider applications for conversion to fill open billets on previously integrated submarine crews and for initial enlisted integration of submarine crews as part of the Submarine Force's integration plan. Integrated submarines include USS *Michigan* (SSGN 727) and USS *Ohio* (SSGN 726) in Bangor, Washington and USS *Florida* (SSGN 728) and USS *Georgia* (SSGN 729) in Kings Bay, Georgia.

Since available rating quotas will be filled as applications are processed, interested Sailors should submit applications as soon as possible. Applicants can expect to be notified by PERS-403 and BUPERS-32 of results within one or two months after submission.

For E-6 and below Sailors, the following submarine career fields are open for conversion: Yeoman Submarine (YNS), Culinary Specialist Submarine (CSS), Logistics Specialist Submarine (LSS), Sonar Technician Submarine (STS), Fire Control Technician (FT), Electronics Technician Submarine Navigation (ETV), Electronics Technician Submarine Communications (ETR), Information Systems Technician Submarines (ITS), Machinist's Mate Weapons (MMW) and Machinist's Mate Auxiliary (MMA).

For E-7 and E-8 Sailors, the following submarine career fields are open for conversion: ITS, LSS, CSS and YNS. Personnel Specialists (PS) and Independent Duty Corpsmen (IDC) will also be considered.

The Non-Nuclear Submarine ECM will best fit Sailors to a rating based on their application package inputs and continued need for each rating.

Professional Apprentice Career Track (PACT) Sailors and junior rated Sailors are encouraged to apply, even with limited time in service, no warfare qualifications, or at-sea experience. PACT Sailors selected

for Submarine service will be eligible for advancement to E-4 upon completion of training for the selected rating and attainment of the required obligated service, as outlined in NAVADMIN 118/18.

Sailors can find additional information regarding the selection process and application requirements via MyNavy Portal at <https://www.mnp.navy.mil/group/career-planning>. Select the Enlisted Community Managers link, and then select the Enlisted Women in Submarines link.

## Welcome Home!

A Sailor assigned to the *Los Angeles*-class fast-attack submarine USS *Santa Fe* (SSN 763) greets his family after he arrived at Joint Base Pearl Harbor-Hickam, after completing his latest deployment.

Photo by Mass Communication Specialist 1st Class Daniel Hinton



# SailorsFirst

## MyNavy Family App Strengthens Families and Fleet

Navy families navigating military life can now find support by downloading the MyNavy Family application, which was released in the days leading up to Military Spouse Appreciation Day, May 10. The free app can be found in the Navy App Locker, <https://applocker.navy.mil>.

The MyNavy Family App was developed as a result of the Navy asking spouses about their experiences and how the Navy could help make it better. Chief of Naval Operations, Adm. John Richardson, has often commented on the important role Navy families play in mission success.

More than 1,100 spouses across the Navy provided input to develop the app. It focuses on 11 key milestone events within the life of the Navy family. Some of those areas include New Spouse Orientation, Mentorship and Networking, Special Needs Family Support, and Navy Retiree Services. Information from more than 22 different websites is now consolidated within one easy-to-use app.

The Navy's Sea Warrior Program (PMW 240) produced the app and Tracen Technologies Inc., a company that specializes in integrated mobile and web solutions, developed the software.

The app provides valuable information whether someone is new to the Navy or a seasoned spouse who has experienced multiple deployments or permanent change-of-station moves. There is also a feedback section so that suggestions can be incorporated into future updates.

The MyNavy Family App supports the Navy Family Framework objective to expand and improve the experience for Navy spouses and families. Other efforts include improving family programs and websites, developing an official MyNavy Family website, providing ombudsman registry access to command leadership spouses, and increasing the availability of live webinars and self-directed learning activities. Additionally, next month PMW 240 will release a new policy allowing reimbursement of up to \$500 of spouse state licensure or certification costs arising from relocation from one state to another due to a permanent change-of-station move.

Future updates of the app will provide a more interactive user experience, and a companion website is in the works.

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Send your submissions to the Military Editor via email to: [underseawarfare@hotmail.com](mailto:underseawarfare@hotmail.com)

## More Ways to Complete Professional Military Knowledge Eligibility Exam

Sailors eligible for advancement to paygrades E-4/5/6/7 can now complete their Professional Military Knowledge Eligibility Exam (PMK-EE) requirements anytime, anywhere in the world, through a self-service app announced in NAVADMIN 140/19, June 26.

Sailors can access the PMK-EE through MyNavy Portal (MNP), Navy e-Learning (NeL), Submarine On-Board Training (SOBT) and now the PMK-EE app. Each of these PMK-EE options operate independently, so Sailors should select one of the systems to complete all modules. With PMK separated from the advancement exam, once Sailors complete their PMK-EE requirements for their paygrade, they will have more time to concentrate exclusively on job-specific occupational knowledge needed for the NWAE, contributing to the Navy's goal of promoting technical experts.

Here's how Sailors can take advantage of the PMK-EE app:

1. Go to the Navy App Locker at <https://www.applocker.navy.mil/> and download the PMK-EE app to a mobile device when ready to complete the eligibility requirement through an on-line exam. This does not require a Common Access Card (CAC).
2. Select each of the five topic areas: Career Information, Leadership and Character, Naval Heritage, Professional Conduct and Seamanship. Each topic may be taken independently of the others, in any order, and not necessarily during the same app session.
3. Once each topic is completed, the app will indicate the graded performance. Review the associated reference from the bibliography for incorrectly answered questions.
4. Score 80% or higher in each topic to pass the entire exam. If you did not pass a topic, you will have to retake it.
5. Once all topic areas are successfully completed, the app will display an overall exam score.
6. The app will ask for the Sailor's DoD ID number (located on the back of your CAC) to transfer completion information to the Navy Training Management Planning System (NTMPS) / Electronic Training Jacket (ETJ).
7. Now, focus exclusively on job-specific occupational knowledge while preparing for the advancement exam.

Since all Sailors must successfully complete PMK-EE prior to being eligible for advancement in each paygrade, this app increases a Sailor's flexibility by providing the capability to do so at the right time and the right place, at the convenience of the Sailor. The app helps support, for example, Sailors who advance through the Meritorious Advancement Program (MAP) or automatically advance to E-4 upon completion of an "A" school.

Active Component and Full-Time Support Sailors must complete the PMK-EE for the desired advancement paygrade by Sept. 1, 2019 to be eligible to advance for the E-4 through E-6 NWAE (Advancement Cycle 244) and by Jan. 1, 2020 for the E-7 NWAE (Advancement Cycle 246). Reserve Component Sailors must complete the PMK-EE for the desired advancement paygrade by Feb. 1, 2020 to be eligible to advance for the E-4 through E-7 NWAE (Advancement Cycle 106).

The PMK-EE, announced in NAVADMIN 085/18, was created to provide greater emphasis on PMK and to separate it from examinations on rating knowledge as part of Sailor 2025 and Rating Modernization efforts. This is an initial step toward electronic advancement exams and, eventually, individually-tailored rating exams, unique to specific jobs and platforms.

For further information on PMK-EE, visit the "Advancement and Promotion" pages under "Career & Life Events" located on the MNP website at [www.mnp.navy.mil](http://www.mnp.navy.mil). Sailors can send questions to [SFLY\\_PMKEE\\_Questions@navy.mil](mailto:SFLY_PMKEE_Questions@navy.mil) or contact the PMK-EE Help Desk at (850) 473-6014/DSN 753.

## Changes of Command

Chief of Naval Operations  
Adm. Michael Gilday relieved  
Adm. John Richardson

COMSUBGRU 10  
Rear Adm. Michael Bernacchi relieved  
Rear Adm. Jeff Jablon

COMSUBRON 4  
Capt. Andrew Miller relieved  
Capt. Brian Sittlow

COMSUBRON 11  
Capt. Patrick Friedman relieved  
Capt. Chris Cavanaugh

COMSUBRON 16  
Capt. Bill Patterson relieved  
Capt. Chris Nash

COMSUBRON 17  
Capt. Todd Figanbaum relieved  
Capt. Nicholas Tilbrook

SUBDEVRON 5  
Capt. Lincoln Reifsteck relieved  
Capt. Stephen Mack

Naval Submarine Training Center  
Pacific (NSTCP)  
Capt. Lance Thompson relieved  
Capt. Andrew Hertel

USS *Alaska* (SSBN 732) (G)  
Cmdr. Adam Thomas relieved  
Cmdr. Eric Cole

USS *Alexandria* (SSN 757)  
Cmdr. Chris Carter relieved  
Cmdr. Todd Santala

USS *Colorado* (SSN 788)  
Cmdr. Jason Geddes relieved  
Cmdr. Gregory Koeppe

USS *Connecticut* (SSN 22)  
Cmdr. Cameron Aljilani relieved  
Cmdr. Carl Trask

USS *Hartford* (SSN 768)  
Cmdr. Stephen Wiegel relieved  
Cmdr. Matt Fanning

USS *Louisiana* (SSBN 743) (Gr)  
Cmdr. Martin Sprague (G) relieved  
Cmdr. Chimi Zacot (B)

USS *Michigan* (SSGN 727) (B)  
Capt. Shawn Huey relieved  
Capt. Bradley Terry

USS *Newport News* (SSN 750)  
Cmdr. Dave Fassel relieved  
Cmdr. Mike Grubb

USS *Providence* (SSN 719)  
Cmdr. Michael McLaine relieved  
Cmdr. Jason Grizzle

USS *San Juan* (SSN 751)  
Cmdr. Douglas Sattler relieved  
Cmdr. Ravi Desai



PCU *Iowa* Keel laying

EB Quonset Point employee Anthony Miele welding ship sponsor Christie Vilsack's initials onto the steel plate that will be installed on the SSN 797 *Iowa*, the 24th submarine of the *Virginia* class. The plate will remain on the *Iowa* throughout the ship's service life.

USS *Scranton* (SSN 756)  
Cmdr. Dave Latta relieved  
Cmdr. Aaron Peterson

USS *Topeka* (SSN 754)  
Cmdr. Richard Salazar relieved  
Cmdr. Steven Tarr

USS *Virginia* (SSN 774)  
Cmdr. Mike Poplawski relieved  
Cmdr. Jeff Anderson

USS *Wyoming* (SSBN 742) (Gr)  
Cmdr. Ben Pollock relieved  
Cmdr. John Strunk

Lt. Cmdr. Patrick Cerone  
USS *West Virginia* (SSBN 736) (G)

Lt. Cmdr. John Coleman  
USS *South Dakota* (SSN 790)

Lt. Ryan Collinsminkel  
USS *Alexandria* (SSN 757)

Lt. Cmdr. Christopher Foss  
USS *Pittsburgh* (SSN 720)

Lt. Cmdr. Andrew Gay  
USS *Alaska* (SSBN 732) (B)

Lt. Cmdr. Ryan Grundt  
USS *Alabama* (SSBN 731) (G)

Lt. Cmdr. Richard Hall  
USS *Cheyenne* (SSN 773)

Lt. Cmdr. Richard Heidel  
USS *Alaska* (SSBN 732) (B)

Lt. Cmdr. Carlos Iguina  
USS *Seawolf* (SSN 21)

Lt. Cmdr. Christopher Jessel  
USS *Alaska* (SSBN 732) (G)

Lt. Cmdr. Kyle Johnson  
USS *Columbus* (SSN 762)

Lt. Cmdr. John Judy  
USS *Nebraska* (SSBN 739) (G)

Lt. Brian Juskiewicz  
USS *Toledo* (SSN 769)

Lt. Cmdr. Joseph Kimock  
USS *Washington* (SSN 787)

Lt. Cmdr. Brian Legare  
USS *Florida* (SSN 728) (G)

Lt. Christopher Marolt  
USS *North Dakota* (SSN 784)

Lt. Cmdr. Douglas McKenzie  
USS *Alabama* (SSBN 731) (G)

Lt. Cmdr. Benjamin Miller  
USS *Georgia* (SSN 729) (B)

Lt. Cmdr. Justin Murty  
USS *Jacksonville* (SSN 699)

Lt. Ward Odenwald  
USS *Minnesota* (SSN 783)

Lt. Cmdr. Justin Ogburn  
USS *Louisiana* (SSBN 743) (G)

Lt. Cmdr. Kenneth Packard  
USS *Wyoming* (SSBN 742) (G)

Lt. Cmdr. Timothy Perkins  
USS *Chicago* (SSN 721)

Lt. Cmdr. Miguel Recalde  
USS *Michigan* (SSGN 727) (G)

Lt. Cmdr. Matthew Reising  
USS *Tennessee* (SSBN 743) (G)

Lt. Cmdr. Andrew Sample  
USS *Maryland* (SSBN 738) (G)

Lt. James Santelli  
USS *Oklahoma City* (SSN 723)

## Qualified for Command

Lt. Cmdr. Matthew Allen  
USS *Mississippi* (SSN 782)

Lt. Cmdr. Anthony Ardito  
USS *Annapolis* (SSN 760)

Lt. Colby Bacon  
USS *Ohio* (SSGN 726) (B)

Lt. Cmdr. Jeffrey Buenaventura  
USS *Mississippi* (SSN 782)

Lt. Mark Buonomo  
USS *Jimmy Carter* (SSN 23)

Lt. Cmdr. Matthew Campbell  
USS *Nebraska* (SSBN 739) (G)

Lt. Cmdr. Jeremy Carroll  
USS *San Francisco* (SSN 711)



Lt. Cmdr. Philip Shrader USS <i>Missouri</i> (SSN 780)	Lt. j.g. Vincent Kindfuller USS <i>Boise</i> (SSN 764)	Lt. Dennis Avery USS <i>Albany</i> (SSN 753)
Lt. Cmdr. Jeremiah Shumway USS <i>Mississippi</i> (SSN 782)	Lt. j.g. Ralph LaFrance USS <i>Oklahoma City</i> (SSN 723)	Lt. j.g. Mary Baker USS <i>Wyoming</i> (SSBN 742) (B)
Lt. Cmdr. Eric Stinson USS <i>John Warner</i> (SSN 785)	Lt. j.g. Douglas McKenna USS <i>Alabama</i> (SSBN 731) (B)	Lt. j.g. Ryan Balder USS <i>Helena</i> (SSN 725)
Lt. Cmdr. Derek Sutton USS <i>Florida</i> (SSGN 728) (G)	Lt. j.g. Scott Parkin USS <i>Henry M. Jackson</i> (SSBN 730) (B)	Lt. j.g. Jake Barney USS <i>Asheville</i> (SSN 758)
Lt. Nicholas Swanda USS <i>Alaska</i> (SSBN 732) (B)	Lt. j.g. Timothy Qualls USS <i>Henry M. Jackson</i> (SSBN 730) (G)	Lt. Timothy Berlin USS <i>South Dakota</i> (SSN 790)
Lt. Cmdr. Robert Szeligowski USS <i>Hartford</i> (SSN 768)	Lt. j.g. Rodney Rodgers USS <i>Henry M. Jackson</i> (SSBN 730) (B)	Lt. Sarah Bernhardt USS <i>Georgia</i> (SSGN 729) (G)
Lt. Cmdr. Todd Talstein USS <i>Toledo</i> (SSN 769)	Lt. j.g. Pascual Santiagomartinez USS <i>Henry M. Jackson</i> (SSBN 730) (B)	Lt. Jacob Bogart USS <i>Nevada</i> (SSBN 733) (B)
Lt. Cmdr. Brian Tribbitt USS <i>California</i> (SSN 781)	Lt. Julie Stabile USS <i>Texas</i> (SSN 775)	Lt. j.g. John Brasek USS <i>Boise</i> (SSN 764)
Lt. Cmdr. Jeremy Wheelis USS <i>Henry M. Jackson</i> (SSBN 730) (G)		Lt. j.g. Zachary Brown USS <i>Tennessee</i> (SSBN 734) (G)
		Lt. Michael Brun USS <i>Kentucky</i> (SSBN 737) (G)
		Lt. Robert Bruss USS <i>John Warner</i> (SSN 785)
		Lt. j.g. Kyle Burke USS <i>Providence</i> (SSN 719)
		Lt. Francesco Calabrese USS <i>Florida</i> (SSGN 728) (B)
		Lt. j.g. Daniel Camargo USS <i>Asheville</i> (SSN 758)

Qualified Nuclear Engineering Officer

Qualified in Submarines

Lt. j.g. Joseph Antworth USS <i>Henry M. Jackson</i> (SSBN 730) (G)
Lt. j.g. Thomas Estus USS <i>Oklahoma City</i> (SSN 723)
Lt. j.g. Thomas Grubish USS <i>Louisiana</i> (SSBN 743) (B)

Meritorious Unit Commendation



Rear Adm. Blake Converse, commander, Submarine Force, U.S. Pacific Fleet, presented the crew of *Virginia*-class fast-attack submarine USS *Mississippi* (SSN 782) with the Meritorious Unit Commendation, July 10. The crew of *Mississippi* received the award for completing three successful missions vital to national security while excelling in all aspects of forward-deployed operations.

Photo by Mass Communication Specialist 2nd Class Michael B. Zingaro

Lt. j.g. Kevin Chen USS <i>Chicago</i> (SSN 721)
Lt. j.g. John Connor USS <i>Toledo</i> (SSN 769)
Lt. j.g. Andrew Delo USS <i>Washington</i> (SSN 787)
Lt. j.g. Alan Deore USS <i>Columbus</i> (SSN 762)
Lt. j.g. Charles Desio USS <i>Hartford</i> (SSN 768)
Lt. Timothy Dwyer USS <i>Tennessee</i> (SSBN 734) (G)
Lt. j.g. Robert Elmore USS <i>West Virginia</i> (SSBN 736) (B)
Lt. Ian Eversman USS <i>Alaska</i> (SSBN 732) (G)
Lt. j.g. Jeffrey Fienberg USS <i>Wyoming</i> (SSBN 742) (B)
Lt. j.g. David Flores USS <i>Tennessee</i> (SSBN 734) (G)
Lt. j.g. Steven Floyd USS <i>Henry M. Jackson</i> (SSBN 730) (G)
Lt. j.g. Nathan Fouratt USS <i>Topeka</i> (SSN 754)
Lt. j.g. Kyle Fowler USS <i>John Warner</i> (SSN 785)
Lt. j.g. Justin Fratanuono USS <i>Kentucky</i> (SSBN 737) (G)
Lt. j.g. Emily Freese USS <i>Georgia</i> (SSGN 729) (G)
Lt. j.g. Thomas Genito USS <i>San Juan</i> (SSN 751)
Lt. j.g. Edward Gharzouzi USS <i>Colorado</i> (SSN 788)
Lt. Margaret Gilroy USS <i>Michigan</i> (SSGN 727) (G)
Lt. j.g. Christopher Griggs USS <i>Greenville</i> (SSN 772)
Lt. j.g. Earl Gripton USS <i>Newport News</i> (SSN 750)
Lt. j.g. Joshua Gruspier USS <i>Albany</i> (SSN 753)
Lt. j.g. Connor Gudmundsson USS <i>Ohio</i> (SSGN 726) (G)
Lt. j.g. Dylan Haines USS <i>Tennessee</i> (SSBN 734) (G)
Lt. Ganesh Harihara USS <i>Providence</i> (SSN 719)
Lt. j.g. Shane Haydon USS <i>Bremerton</i> (SSN 698)
Lt. j.g. John Haynes USS <i>Nevada</i> (SSBN 733) (B)
Lt. j.g. Bradley Hendrickson USS <i>Louisiana</i> (SSBN 743) (B)
Lt. j.g. Steven Higgins USS <i>South Dakota</i> (SSN 790)
Lt. Bradley Hooker USS <i>Greenville</i> (SSN 772)
Lt. Christopher House USS <i>San Juan</i> (SSN 751)
Lt. j.g. Stephen Johnson USS <i>Delaware</i> (SSN 791)
Lt. j.g. Andrew Jones USS <i>Springfield</i> (SSN 761)
Lt. James Kacergis USS <i>Michigan</i> (SSGN 727) (B)
Lt. j.g. Zachary Kerscher USS <i>Maryland</i> (SSBN 738) (G)
Lt. j.g. William Kerstein USS <i>Key West</i> (SSN 722)
Lt. j.g. Asif Khan USS <i>Georgia</i> (SSGN 729) (G)
Lt. j.g. Daniel King USS <i>Pittsburgh</i> (SSN 720)
Lt. j.g. Spencer Kitten USS <i>Pasadena</i> (SSN 752)
Lt. j.g. Timothy Kloecker USS <i>Pennsylvania</i> (SSBN 735) (G)
Lt. j.g. Beau Langdon USS <i>Hampton</i> (SSN 767)
Lt. j.g. David Liu USS <i>Scranton</i> (SSN 756)
Lt. Joshua Lizotte USS <i>Springfield</i> (SSN 761)
Lt. Joshua Llewellyn USS <i>John Warner</i> (SSN 785)
Lt. Jonathan Lucas USS <i>Jimmy Carter</i> (SSN 23)
Lt. j.g. Jacob Magnusson USS <i>Missouri</i> (SSN 780)
Lt. j.g. Troy Manzitti USS <i>Indiana</i> (SSN 789)
Lt. Benjamin Markham USS <i>Pasadena</i> (SSN 752)
Lt. j.g. Ryan Martinez USS <i>Charlotte</i> (SSN 766)
Lt. j.g. Victor Martinez USS <i>Topeka</i> (SSN 754)
Lt. j.g. Samuel McClay USS <i>Alexandria</i> (SSN 757)
Lt. j.g. Douglas McKenna USS <i>Alabama</i> (SSBN 731) (B)
Lt. j.g. Patrick McKercher USS <i>Colorado</i> (SSN 788)

Guam Celebrates 75th Liberation Day



Fire Control Technician 2nd Class Patrick Trevino high-fives children during the annual Guam Liberation Day Parade, July 21. More than 50 Sailors from CSS-15 participated in the celebration commemorating the 75th anniversary of the liberation of Guam from Japanese occupation by U.S. forces during World War II.

Lt. j.g. Keith Monia USS <i>Indiana</i> (SSN 789)	Lt. j.g. Kyle Pawlowski USS <i>Nevada</i> (SSBN 733) (B)	Lt. Zachary Speirs USS <i>Pittsburgh</i> (SSN 720)
Lt. j.g. Scott Morris USS <i>Pennsylvania</i> (SSBN 735) (B)	Lt. j.b. Joseph Piccinini USS <i>Louisville</i> (SSN 724)	Lt. Julie Stabile USS <i>Texas</i> (SSN 775)
Lt. Timothy Nangeroni USS <i>Ohio</i> (SSGN 726) (B)	Lt. j.g. Nicholas Pracht USS <i>Kentucky</i> (SSBN 737) (G)	Lt. j.g. Jonathan Stelzleni USS <i>West Virginia</i> (SSBN 736) (B)
Lt. Broderick Neelfeller USS <i>Jimmy Carter</i> (SSN 23)	Lt. j.g. Steven Puchkoff USS <i>Alexandria</i> (SSN 757)	Lt. j.g. Nathaniel Stone USS <i>California</i> (SSN 781)
Lt. j.g. Oliver Nelsen USS <i>Mississippi</i> (SSN 782)	Lt. j.g. Timothy Qualls USS <i>Henry M. Jackson</i> (SSBN 730) (G)	Lt. j.g. Richard Summer USS <i>Bremerton</i> (SSN 698)
Lt. j.g. Pdraig Obrien USS <i>Washington</i> (SSN 787)	Lt. j.g. Anthony Reid USS <i>West Virginia</i> (SSBN 736) (G)	Lt. j.g. Austen Suqi USS <i>North Dakota</i> (SSN 784)
Lt. j.g. Michael Oswald USS <i>New Mexico</i> (SSN 779)	Lt. Sabrina Reyes USS <i>Minnesota</i> (SSN 783)	Lt. j.g. Christopher Szymanski USS <i>Louisville</i> (SSN 724)
Lt. j.g. Marcus Padilla USS <i>Ohio</i> (SSGN 726) (G)	Lt. j.g. Pascual Santiagomartinez USS <i>Henry M. Jackson</i> (SSBN 730) (B)	Lt. James Tammen USS <i>Nevada</i> (SSBN 733) (B)
Lt. j.g. Brendan Page USS <i>Vermont</i> (SSN 792)	Lt. Christopher Savoie USS <i>Rhode Island</i> (SSBN 740) (G)	Lt. j.g. Tyler Todd USS <i>Maryland</i> (SSBN 738) (G)
Lt. j.g. Joseph Palazzolo USS <i>New Hampshire</i> (SSN 788)	Lt. j.g. Robert Schroer USS <i>Minnesota</i> (SSN 783)	Lt. j.g. John Trethewey USS <i>Charlotte</i> (SSN 766)
Lt. Kevin Park USS <i>West Virginia</i> (SSBN 736) (B)	Lt. j.g. Ari Shaps USS <i>California</i> (SSN 781)	Lt. Rohika Wagner USS <i>Greenville</i> (SSN 772)
Lt. j.g. Scott Parkin USS <i>Henry M. Jackson</i> (SSBN 730) (B)	Lt. j.g. Aaron Sims USS <i>Jefferson City</i> (SSN 759)	Lt. j.g. Brandon Watson USS <i>Newport News</i> (SSN 750)
Lt. j.g. Collin Parry USS <i>Pasadena</i> (SSN 752)	Lt. j.g. Bryan Smith USS <i>Bremerton</i> (SSN 698)	Lt. Zachary Watt USS <i>New Hampshire</i> (SSN 778)
Lt. Akshat Patel USS <i>Hawaii</i> (SSN 776)	Lt. j.g. Philip Song USS <i>West Virginia</i> (SSBN 742) (B)	Lt. Brian Wells USS <i>Providence</i> (SSN 719)



Lt. j.g. Colton Westover  
USS *Hampton* (SSN 767)

Lt. j.g. Eric Wilkening  
USS *North Carolina* (SSN 777)

Lt. j.g. Megan Will  
USS *Texas* (SSN 775)

Lt. j.g. Brian Willi  
USS *Georgia* (SSGN 729) (G)

Lt. j.g. Brandon Williams  
USS *Alaska* (SSBN 732) (G)

Lt. Jared Wilson  
USS *Connecticut* (SSN 22)

Lt. Kathleen Wilson  
USS *Michigan* (SSGN 727) (B)

Lt. William Woltman  
USS *Michigan* (SSGN 727) (B)

Lt. j.g. Jakob Yeager  
USS *Delaware* (SSN 791)

Qualified Engineering  
Department Master Chief

EMNC Phillip Alampi  
USS *Alexandria* (SSN 757)

ETNC Brett Conner  
NPTU Charleston GST

MMNC Justin Cotter  
NSTCPAC Pearl Harbor

ETNC Matthew Fedele  
S SUBTRAFAC Norfolk

ETNC Glenn Fournier  
USS *Montpelier* (SSN 765)

EMNC Scott Garvey  
USS *Nebraska* (SSBN 739) (G)

MMNC Scott Harris  
U.S. Naval Academy

MMNC Andrew Hyatt  
USS *Alaska* (SSBN 732) (B)

MMNC Jason Leinss  
USS *Olympia* (SSN 717)

MMNC Brian Love  
USS *Colorado* (SSN 788)

EMNC John Martin  
NSTCP SITE FTT

ETNC George Melton  
USS *Vermont* (SSN 792)

EMNC Brian Morgan  
USS *Henry M. Jackson* (SSBN 730) (B)

ETNC Curtis Poff  
USS *Alexandria* (SSN 757)

MMNC James Rogers  
NPTU Ballston Spa MARF

MMNC Patrick Smith  
USS *Alaska* (SSBN 732) (B)

Stockdale Award Recipients



The Navy announced Cmdr. Patrick O’Loughlin of U.S. Fleet Forces Command and Cmdr. Carl Trask of Pacific Fleet Command (former CO of USS *Connecticut* SSN 22), as recipients of the 2019 Vice Admiral James Bond Stockdale Leadership Award.  
Stockdale Finalists included: Cmdr. Corey Poorman, CO, USS *Pasadena* (SSN 752).

ETNC Joseph Torrisi  
USS *North Dakota* (SSN 784)

Qualified Chief of Boat

MMACS Tim Crain  
SLC DET San Diego

STSCS Hamilton Felt  
COMSUBPAC

MMWCS Jeremiah Marzean  
NSSF/RSG New London

MMACS Jose Rivera  
NSSF/RSG New London

ETRCs Rob Sims  
USS *Missouri* (SSN-780)

FTCS Brad Taylor  
CSS-12

YNSCS Matt Zwan  
USS *Key West* (SSN-722)

Photo by Mass Communication Specialist 1st Class Nathan Laird

Trident II Test Launch



U.S. Navy photo

An unarmed Trident II D5 missile launches from the *Ohio*-class ballistic missile submarine USS *Nebraska* (SSBN 739) off the coast of San Diego, California, Sept. 4, 2019. The test launch was one of four conducted Sept. 4 and Sept. 6 as part of a U.S. Navy Commander Evaluation Test, validating performance expectations of the life-extended Trident II D5 strategic weapon system.

Omaha Trophy  
awarded to:



In the photo above: Deputy Commander, U.S. Strategic Command (USSTRATCOM), Vice Adm. Dave Kriete (left) presents the Omaha Trophy to Master Chief Fire Control Technician Jeffrey Barnes, chief of the boat, assigned to the Gold crew of the *Ohio*-class ballistic-missile submarine USS *Nevada* (SSBN 733).

USS NEVADA (SSBN 733)

The U.S. Strategic Command (USSTRATCOM) Omaha Trophy was presented to the Blue and Gold crews of USS *Nevada* (SSBN 733) during a ceremony held at Naval Base Kitsap-Bangor, Aug 21. Vice Adm. David Kriete, deputy commander, USSTRATCOM, presented the award to the commanders of *Nevada* on behalf of the committee and the citizens of Omaha, Nebraska.

The Omaha Trophy is awarded annually to USSTRATCOM units who demonstrate the highest standards of performance in the command’s mission areas, their role in global operations and the command’s continued emphasis on strategic deterrence.

This is the second time *Nebraska* has been awarded the Omaha Trophy.

–Bravo Zulu–

Photo by Mass Communication Specialist 3rd Class Emilia Hilliard





## WW II Submarine Battle Flags



## USS *Spot* (SS 413)

On December 17, 1944, USS *Spot* (SS 413) began her first war patrol along the China coast under the command of Cmdr. William Post Jr. In her first combat action, she sunk two enemy trawlers in a gun attack on January 7, 1945. Between January 11 and 14, she sunk five enemy merchant vessels in three surface engagements. On January 19, *Spot* sunk a freighter with one torpedo hit and, later, a tanker with two torpedo hits.

The next day she attacked a trawler with her dwindling 20mm ammunition. Cmdr. Post nosed *Spot* against the trawler and sent over a boarding party. The trawler suddenly began to sink. All men made it back aboard along with the sole Japanese survivor.

*Spot's* second war patrol was again off the China coast. On March 17, after torpedoing a cargo ship, radar detected a convoy, so she gave chase. One torpedo struck a merchant ship before *Spot* had to vacate the area. One escort later found *Spot* on the surface and pursued. Cmdr. Post fled on the surface and engaged the overtaking escort, a minesweeper, in a running gun battle while awaiting word from COMSUBPAC of having received an important radio transmission and hoping to find deeper water. With the escort close astern and having taken a severe beating from *Spot's* 5" and 40mm guns, *Spot* finally received word from COMSUBPAC. She dived in 180 feet of water and evaded the minesweeper.

On April 25, *Spot's* crew noticed a cluster of buildings and radio towers behind a lighthouse on Kokuzan Island. *Spot* opened fire with her 5" deck gun. The attack ignited an oil storage building, brought down one of the radio towers, and left several buildings ablaze.

*Spot's* third war patrol was comparatively uneventful, sinking two junks and taking aboard two prisoners.

As reflected on her flag, *Spot* destroyed 16 merchant vessels, damaged a combatant, and shelled the radio station on Kokuzan. Not on her flag are the four battle stars the boat received for her WWII service.